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Chemical Market Report

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CMR MARKET INDEX

CHEMICAL MARKETING	Oct. 17, 1986	151.25
REPORTER's market index of chemicals and related materials (100=1974 average), based on 97 key commercial chemicals, appears alongside with data for two weeks ago, last month and last year.	Oct. 6, 1986	151.60
	Sept. 19, 1986	151.25
	Oct. 18, 1985	152.93

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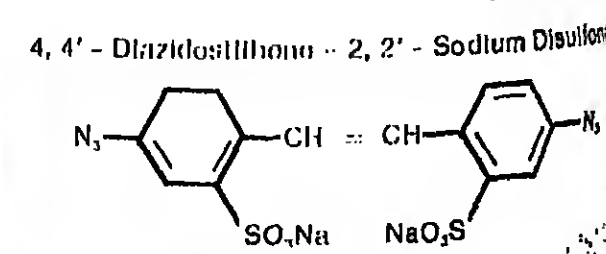
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CHEMICAL MARKETING

BUTENE-1: Growth levels out after big gain
LLDPE
STYRENE: Producers announce November hike
XANTHAN GUM: Rhône-Poulenc expands plant
CYCLOHEXANE: Resin use seen rising in years

Chemical Market Report

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INSIDE CMR

DRUG EXPORT: PMA seeks White House support of bill that would make it easier to export drugs. Compensation provision could cause problems. Page 3

EUROPE'S FEEDS: US exports of propylene could make up for a shortfall of supplies in Europe caused by a switch to lighter feedstocks. Page 5

LEGISLATIVE: Shifts in the leadership of Senate committees important to the chemical industry will occur regardless of which party wins. Page 5

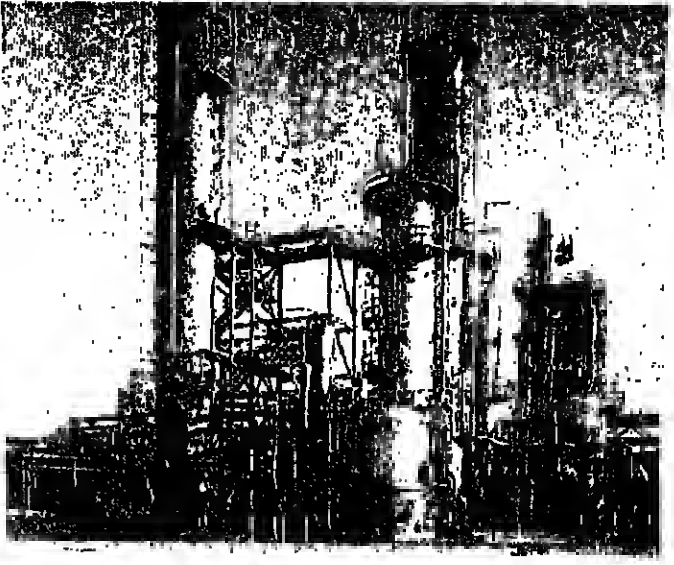
OZONE SHIELD: 'Holes' in the Earth's protective ozone shield may or may not be result of atmospheric chemical breakdown products. Page 7

CHEMICAL EARNINGS: Du Pont and Allied-Signal record gains, as do Celanese and American Cyanamid. Pennwalt reverses results. Page 9

ACRYLO: Producers experience something of a market flip-flop as strong demand for fiber and exports push up requirements. Page 7

MONTEDISON DROPS: The Big Italian company's pursuit of the troubled Swedish biotechnology company, Farmenta AB, is over. Page 3

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Peroxide Outlook

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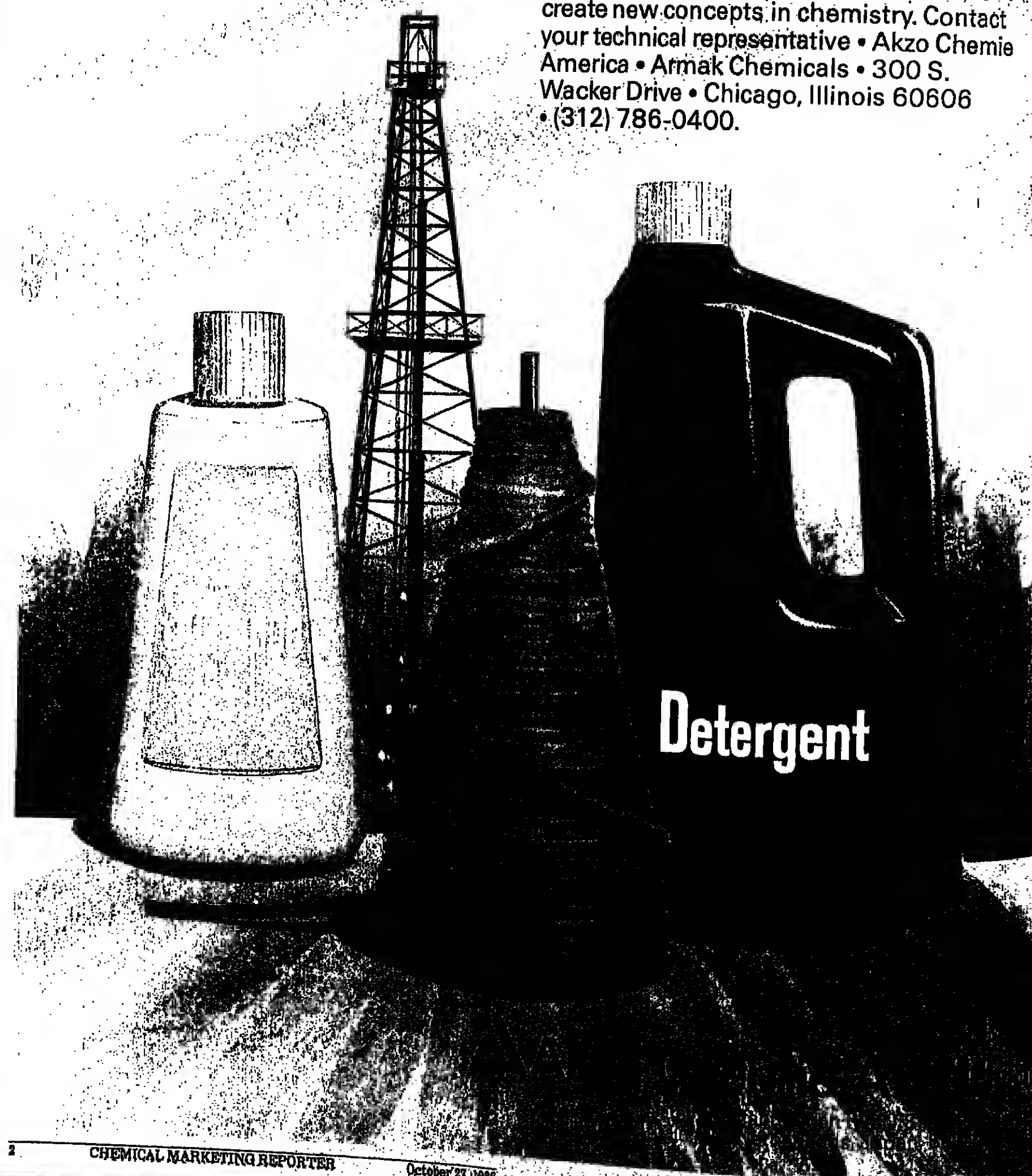
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Drug Export Action Pressed

Pharmaceutical Manufacturers Association is urging the White House to accept an omnibus drug and health authorization package that contains pharmaceutical exports legislation.

The bill, passed by both the House and the Senate in the final hours of the 99th Congress, would permit the export from the US of prescription drugs which have not been approved for marketing within the US by Food & Drug Administration.

"We strongly support the export provisions of the bill and urge the President to sign it," says PMA president Gerald Mossinghoff.

"This legislation, if signed into law, would strengthen the ability of US firms to compete in world markets and provide jobs here that otherwise would be created abroad, since only the US presently prohibits such exports."

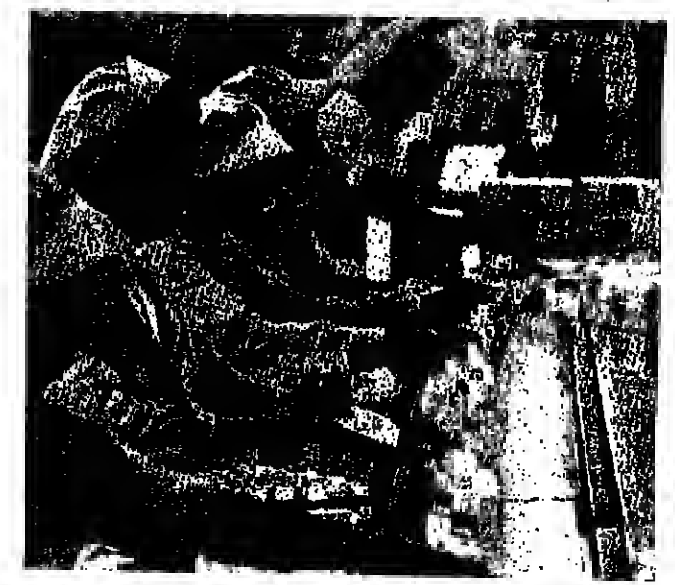
The package, however, faces an uncertain future at the White House because it also includes a provision to create a Federal "no fault" compensation system for victims of childhood vaccines.

The Reagan Administration has endorsed the drug export bill, but strongly opposes the vaccine injury compensation legislation.

Rep. Henry Waxman (D-Calif.) the chief sponsor of the vaccine bill, said a growing number of parents are taking on the heavy financial burden of suing vaccine manufacturers on behalf of their injured children.

Many states do not allow children to win lawsuits.

Continued on Page 25



DRUG FINISHING IN ARGENTINA: US pharmaceutical makers maintain that under current law they must either build plants abroad or license to foreign producers.

Montedison Drops Pursuit Of Swedish Biotech Firm

Montedison SpA's efforts to acquire Fermenta AB, the Swedish biotechnology firm, came to an abrupt end last week, with the Italian chemical giant blaming Fermenta's founder and chief executive for the failure.

Montedison said it broke off talks with Fermenta in part because of agreements reached by Refsat El-Sayed, the Fermenta founder, to sell key company assets in the US to other parties, including Monsanto Company.

Earlier this month, Fermenta reached agreements in principle to sell its Fermenta Plant Protection subsidiary to Monsanto, and two other US subsidiaries to an undisclosed buyer.

Giorgio Porta, managing director of industrial policy at Montedison, called the agreements a "surprising thing," complaining that Montedison had not been informed about the sale of the subsidiaries, which Montedison had planned to integrate with its own operations.

Montedison also complained last week that Fermenta refused to provide financial information necessary to carry out the acquisition.

Fermenta countered that Montedison was seeking confidential information which would be illegal to disclose under Swedish law, but Montedison claimed that a Swedish "expert" in such matters assured Montedison of the legality of the request. A Montedison

spokesman in Milan was unable last week to identify the expert.

Under a preliminary agreement reached in July, Montedison was to purchase Mr. El-Sayed's 76.5 percent voting control of the company, for \$340 million.

Fermenta's unions, however, expressed concern about a Montedison takeover, so Montedison agreed in concept to a plan under which it would initially acquire only part of Mr. El-Sayed's holding in Fermenta. After a transition period, during which Mr. El-Sayed would remain as chief executive, Montedison would acquire the remaining shares.

Mr. El-Sayed subsequently sold half of his 6 million A shares in Fermenta to three separate Swedish institutions. Two were prepared to sell back their Fermenta shares, but a third — Procordia AB — reportedly acquired the shares for strategic purposes. Procordia is also said to hold an option to acquire an additional 3 million A shares.

Montedison chairman Mario Schimberni told a Montedison shareholders' meeting early last month that the company would pursue an "alternative" acquisition if an agreement were not reached by November 30 assuring Montedison eventual control of Fermenta.

The Montedison chairman said at the time that the company had an "equivalent" acquisition on standby, but last week, the company said only that it was holding talks with US and European firms about "possible acquisitions and joint ventures" in the biotechnology area.

Superfund Bill Reaction: Relief Found in Most Quarters

Lawmakers, the chemical industry and environmental groups expressed mostly relief last week as they hailed the signing of the superfund reauthorization bill (S. 1070/86, pg. 3) saying it is a historic step toward a safer, healthier environment.

"This is the most significant piece of environmental legislation this decade," said Sen. Frank Lautenberg (D-N.J.). "It's a great day for New Jersey and other states striving to clean up toxic waste sites."

"The path to enactment has been long and sometimes difficult, but it's extremely gratifying to have achieved such a significant result," Rep. John Dingell (D-Mich.), added. "I will be watching closely to see that the Reagan Administration utilizes its new powers and gets on with the desperately needed cleanup of hazardous waste."

The legislation, which will provide \$9 billion for the cleanup of toxic waste dumps and underground storage tanks, includes landmark provisions concerning community right-to-know, community response to environmental emergencies and tough standards for cleanup.

Officials in the Treasury and Energy Departments had urged President Reagan to

veto the bill because of the measure's new broad-based corporate tax and its high levy on the petroleum industry.

But in light of the legislation's overwhelming support in Congress, the President chose to heed the advice of Environmental Protection Agency Administrator Lee M. Thomas, who had warned that a veto would end the cleanup program and throw his agency into chaos.

"The bill's financing has some real concerns," said President Reagan, "but the health and safety of Americans is among the highest priorities of government, so we will not allow an interruption in the cleanup process."

He said he was assured by Mr. Thomas that EPA will spend only what is necessary to accomplish the objectives of the program, and by Senate Majority leader Robert Dole (R-Kan.) that Congress will not increase the superfund tax or use it to pay for other programs.

Environmentalists, who have complained that the administration has completed only six cleanups during the first five years of the superfund program, said the new law ensures that EPA now has the resources to do the job.

"There should be no more excuses for that," Continued on Page 27

Chemical Marketing Reporter

VOLUME 230
Number 17

OCTOBER 27, 1986

Peroxide Makers Look To New Applications

North American hydrogen peroxide producers are looking at new applications to fill a wide supply and demand gap that is developing as new capacity comes on stream. The broad range of potential new markets seems to ensure the gap will be filled.

The addition of new capacity, however, is a very real and formidable obstacle. Du Pont Canada expects its 80-million-pound-per-year Maitland, Ontario, plant will be on stream by January. Degussa Corporation says its equally large plant will be completed some time in the Spring. Lastly, Oxychem Canada, a venture involving Atochem and Liquid Air of France (jointly known as OxySynthese) and the marketing network of C-I-L is scheduled to complete its 44-million-pound-per-year facility by September of next year.

At least some of the new capacity is intended for overseas export. Degussa, for instance, expects to export at least 10 million pounds in its first year of operation. The material will go to markets such as the Far East, Africa and South America that are now serviced by the company's European facilities.

In addition, imports into the US by Degussa and into Canada by OxySynthese should be backed up over the course of next year as the two companies' North American facilities gear up.

For the most part, however, producers are looking to new or exposed markets to fill the supply gap. Most prominent, and the one producers expect to kick in first, is the pulp and paper industry.

Producers say several new thermomechanical and chemimechanical pulping (CTMP) operations are or will soon come on stream in Canada.

Observers say paper makers are moving to the CTMP method because of its high pulp yields: 90 percent of the tree is utilized as opposed to only 50 to 60 percent in traditional chemical methods.

However, according to peroxide makers, to achieve high brightness paper grades without overly degrading fiber structure, hydrogen peroxide is necessary in the bleaching stage of a CTMP process. Sodium hydroxide

file is used, they say, but mainly in making medium brightness grades.

While CTMP pulping will account for the bulk of pulp and paper growth, Kraft pulpers are also expected to increase peroxide use in the next few years. Degussa, for instance, feels Kraft pulp makers in the Southeast will double their peroxide use next year, coming albeit, from a fairly small base.

The company notes that hydrogen peroxide can be added to a Kraft pulping process at a number of different stages without any significant changes in equipment. Moreover, Degussa feels the pulp and paper industry in the Southeast has a good long-term outlook because the warmer temperature ensures a

Continued on Page 30



HYDROGEN PEROXIDE PLANT. Three new ones coming onstream next year will upset supply-demand balance.

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Waste Rule for US Agency Under Fire on Capitol Hill

A bipartisan group of 70 members of Congress have urged Energy Secretary John Herrington to withdraw a controversial proposed rule that would allow Department of Energy to exempt mixed chemical and radioactive waste generated at its defense facilities from Federal and state regulations. "This proposed rule would allow DOE to continue dumping some of its mixed waste directly into the ground, even though this practice has resulted in serious contamination of the groundwater and surface water at some of DOE's facilities," says Rep. Mike Syner (D-Okla.), chairman of the House Government Operations subcommittee on environment, energy and natural resources.

He also notes that the private sector, for the most part, has been prohibited from disposing of similar waste in this manner.

Rep. Syner, who initiated the rule when it was proposed by DOE last November. A public hearing held by his subcommittee last July revealed a number of problems resulting from the way officials at DOE facilities were attempting to implement the rule even though it has not yet been adopted.

"At our hearing, we found that a large burial ground at the Savannah River Plant in South Carolina contained a lot of very nasty chemical hazardous waste as well as radioactive waste, including 10 tons of mercury, 10,000 gallons of fluids containing toluene, xylene and other hazardous chemicals, almost 200 pounds of PCB's, and 3,300 gallons of waste oil."

"DOE had known for some time that the groundwater beneath the burial ground was contaminated with mercury above drinking water levels."

Continued on Page 26

Carbon Dioxide Plant On Way for Airco

A new \$4 million carbon dioxide plant is being built by Airco Industrial Gases in Baltimore, Md. Slated for May 1, 1987 start-up, production capacity of the new plant will be 180 tons per day of liquid CO₂.

The Baltimore plant will be the eleventh liquid CO₂ facility owned and operated in the US by Airco. Liquid product produced at the new site will be sold in the Northeast US, primarily for food freezing or chilling, beverage carbonation, and a variety of industrial applications.

The new plant is being built next to SCM Corporation's titanium dioxide facility from which Airco will draw its raw product for liquid CO₂ production. Airco has contracted with Pinal Process Equipment, Inc., League City, Tex., for plant construction.

Carbide Specialty Polyolefins Unit Open for Business in New Jersey

Last week, Union Carbide Corporation officially opened a new technology and operations center for its "Unipol" Specialty Polyolefins Division in Somerset, N.J.

The Specialty Division's research and development laboratories, information systems department, distribution operations center and eastern regional sales office will all be based in the new center.

Spokesmen for the company feel that this consolidation of research with administrative and sales departments will offer customers faster access to technical service assistance, product and safety data, and shipping and other information.

In addition to polymer evaluation, wet and analytical chemistry labs, the new Weston Canal Road unit features extensive high pressure pipe testing facilities, advanced rheology, fire and electrical test labs and raw material evaluation facilities including laser-read detectors. It includes a batch-through intermediate-scale compounding facilities, as well as pilot-scale mixing lines, film and rotational molding equipment.

Research at the facility currently centers on polyethylene, the largest-volume polyolefin and the most widely used plastic in the world. Union Carbide has been involved with this market since its infancy in the early 1940's.

Researchers at Somerset are focusing on power and industrial cable and photodegradable packaging applications. They are also

Carbide Set to Build Air Separation Plant

The Linde Division of Union Carbide Corporation says that it will build an \$11.2 million air separation plant in Marietta, Ohio, with construction slated to begin in early 1987. The state-of-the-art facility will produce up to 300 tons per day of nitrogen, oxygen and argon, according to E.G. Holard, vice-president of Linde Bulk Industrial Gases. It will incorporate the latest energy-saving technology to operate with approximately 35 percent greater efficiency than previous designs.

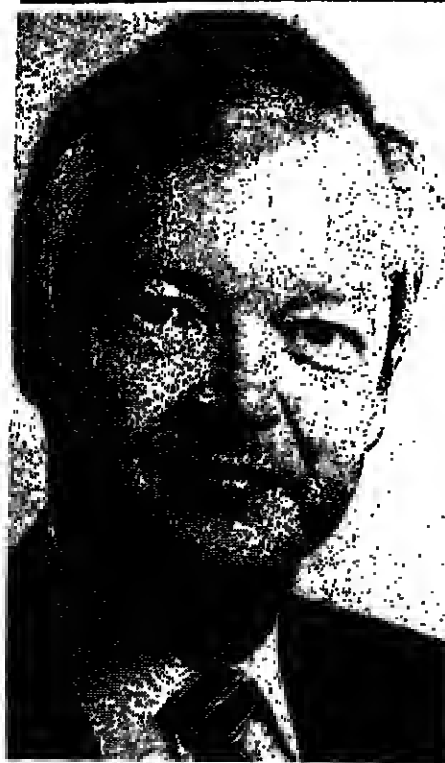
"The new facility will be constructed adjacent to an Elkem Metals plant, which it will provide with gaseous oxygen via pipeline," Mr. Holard says. In addition to supplying product to Elkem, the new plant will produce oxygen, nitrogen and argon in liquid form for other Linde customers in southern Ohio and West Virginia.

"These customers are currently being served by cryogenic transports that deliver liquid oxygen from other air separation facilities," he notes. "The Marietta plant will make it possible for us to provide even better supply reliability. It also will give Linde the capacity to serve the future growth needs of the marketplace, and to meet the increasingly stringent quality requirements of our customers."

Strontium Seen Strong Despite Competition

In spite of recession and competition from alternative materials, demand for strontium continued its strong growth in the first half of the 1980's, according to Roskill Information Services, Ltd., of the UK.

In terms of strontium carbonate, demand is expected to rise from 94,300 metric tons in 1985 to 105,000 in 1990 and around 27,000 metric tons by the turn of the century, Roskill says in a new report on the metal. The rise of Mexico as a producer in the early 1970's has been followed by the even higher rise of output in Turkey and Spain, and more recently by considerable growth in Iran, Roskill comments.



Paul H. Williams, who has been named executive vice-president of Calansea Canada Inc. He was most recently technical director of Calansea Textile Fibers in Charlotte, NC.

Damon Biotech Seeking Partner

Damon Biotech, Needham Heights, Mass., last week said it is engaged in "serious discussions with a number of major multi-national pharmaceutical firms" relating to the development and marketing of the tissue plasminogen activator t-PA.

Currently, these discussions envision that Damon Biotech would manufacture t-PA using its proprietary technologies and a pharmaceutical firm would market the product and have primary responsibility for obtaining necessary regulatory approvals in specific geographical areas.

Plasminogen activators are a new class of biological products which show great promise in the treatment of cardiovascular diseases. Damon Biotech's t-PA is produced by the Company's proprietary "Enscape" and cellular enhancer systems. Test results from preliminary studies of Damon Biotech are promising.

Continued on Page 28

Miwon Plans to Build Lysine Plant in Korea

Miwon Inc., Seoul, Republic of Korea, says it plans to construct a \$30 million lysine monohydrochloride production plant with an annual capacity of 20,000 metric tons in Kusan city, Chollabuk-do Province, Republic of Korea. Construction should be completed in September 1987 and has already started.

Miwon currently operates a plant in Busan City, Korea, with 10,000 tons of capacity.

Miwon and three Japanese companies — Ojinomoto, Kyowa Hakko and Toray — are the world's major producers. Miwon now exports 80 percent of the product. The new plant will export about \$50 million of the feed additive annually which the company says, will increase Miwon's share of the international market from 10 percent to 20 percent.

Clean Water Bill Urged by Lawmakers

Lawmakers and environmental groups called on President Reagan last week to promptly sign the reauthorization of the Clean Water Act, which sailed through the House by a 408-0 vote and was passed unanimously by the Senate, 98-0.

While House budget director James Millar is recommending that the President veto the measure because it is a "budget huster" that will increase the Federal deficit.

The legislation, which calls for an expenditure of \$16 billion over the next ten years for sewage treatment facilities, was delivered to the White House Friday, giving the President until November 5 to sign or pocket veto the measure.

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Publisher: Arthur R. Kavalier



UK ETHYLENE CRACKER: Switch to lighter feeds is major factor in current European problem shortage.

Acrylonitrile: Fiber Position Causes Change

Acrylonitrile producers are experiencing something of a flip-flop in the marketplace. After several years of weak domestic demand for acrylic fiber and strong export volumes, the position has been somewhat reversed. US acrylic fiber makers are in the midst of a strong revival, while the world market is now long in supply and weak in pricing.

US acrylic fiber producers have been helped by higher priced imports, brought on by the weaker dollar, and by fashion trends favoring acrylic fibers. The producers have helped themselves by trimming capacity in the past two years by 10 percent.

The fashion emphasis has been on lightweight, brightly colored sweaters made from acrylic. And while demand for acrylic sweaters is up significantly, other fleecewear products, such as sweatsuits, are performing well.

These factors have helped produce a strong domestic acrylic fiber market. Another important factor, one source says, has been increased productivity at the textile mills. The effect has been an 18 percent upturn in domestic acrylic and modacrylic fiber shipments through the first nine months of 1986, according to the Textile Economics

Continued on Page 18

Europe May Draw On US Propylene To Meet Shortfall

US exports of propylene could make up for a shortfall in supplies of the material in Europe as a result of a switch to lighter feedstocks in European ethylene crackers.

"With propylene prices being up to 0.9 times higher than those for ethylene at the moment, there must be a natural tendency for Western Europe to attract propylene imports, particularly from the US," Howard Browning of Imperial Chemical Industries PLC told this year's conference of the European Chemical Marketing Research Association in Antwerp, Belgium.

US ethylene crackers are producing 1 million to 1.5 million tons extra of propylene annually because by contrast, they are using a higher quantity of heavier feedstocks, mainly because of lower oil prices.

But Mr. Browning, aromatics marketing manager at ICI's petrochemicals and plastics division, thinks that any surge of US imports into Europe will not last for long because the present high price advantage of propylene over ethylene is likely to be short-lived.

The supply/demand picture in recent

years shows that when propylene prices rise they soon decline as supplies are increased.

A major factor in the propylene market is that supply is not directly linked to demand because the material is a byproduct of ethylene production and refinery operations. Only when the price is right do some suppliers enter the market.

In mid-1985, when propylene was considered to be in short supply, the price relative to ethylene rose.

"This attracted a large volume of propylene, both from the refineries and from imports," Mr. Browning explains.

"Inevitably a surplus arose, and the price collapsed in early 1986, even after taking into account the major oil price changes and the relative strength of ethylene at that time."

Supplies were reduced, causing propylene prices to rise once again.

"This reflects the relative ease with which propylene supply can be encouraged or choked off by its pricing, whether from refineries or from imports into Europe," he notes.

"It also reflects the dynamics of a market where the product is not really made for its

Continued on Page 21

UCC Chairman Sees Gains

Despite doomsayers, there is a turnaround in US industry competitiveness, says Union Carbide chairman Warren M. Anderson.

In remarks before the Chicago Economic Club, Mr. Anderson said, "I think you could go through almost every one of our industries, from shoes, to construction equipment, to textiles to machine tools, and find, in the midst of tremendous and unrelenting competitive pressures, companies doing what it takes to become winners again. Paying more attention to quality, paying more attention to customers, paying more attention to costs."

After the recession of the early 1980's devastated its major markets, he noted, the chemical industry, including Union Carbide, embarked on a massive program of rationalizing and restructuring that has changed not only the shape of the industry, but its prospects.

"When we turn to innovation, flexibility,

technological change for comparative advantage," Mr. Anderson noted, "we are challenging our overseas competitors on our terms, not theirs. We now understand that our strength is moving, by means of technology and innovation, to the next generation — the new product that makes its predecessor not better, but obsolete." The prospect of a stronger US economy, he said, is why foreign companies are active in this country — building plants, stepping up investment and acquisitions, and joining in co-ventures with American firms.

"The point is that we do have strengths, that our decline is not inevitable, but instead is pointing us in new and promising directions," Mr. Anderson stated. "Management is learning that its real role is not in solving problems, but in creating the kinds of organizations that can solve their own problems."

Senate Shifts Are Expected After Election

Regardless of the outcome of the 1986 elections, significant changes are expected to occur in the chairmanships of several Senate committees that are responsible for legislation that governs the chemical and pharmaceutical industries.

Should the Republicans maintain their current majority, most of the changes would stem from the retirement of Sen. Barry Goldwater (R-Ariz.), whose departure from the Armed Services Committee will likely result in new leaders at the Judiciary and the Labor & Human Resources committees.

The current Judiciary Committee chairman, Sen. Strom Thurmond (R-S.C.), has indicated a desire to take over the Armed Services post. Sen. Thurmond's abdication, plus the retirements of Sens. Charles McC. Mathias (R-Md.) and Paul Laxalt (R-Nev.) would clear the Judiciary chairmanship for Sen. Orrin Hatch (R-Utah).

Sen. Hatch has not stated his intention, but many Capitol Hill observers anticipate such a move. Sen. Robert T. Stafford (R-Vt.) is next in line for the Labor & Human Resources chair, but he is expected to opt for his current position as chairman of the Environment & Public Works Committee.

Next in line at Labor & Human Resources is Sen. Dan Quayle (R-Ind.), who like Sen. Hatch is a conservative and a strong ally of business.

However, if the Republicans fail to retain control of the Senate, Sen. Joe Biden (D-De.) would take over at Judiciary and Sen. Edward Kennedy (D-Mass.) would become chairman of Labor & Human Resources.

Sen. Kennedy worked with Sen. Hatch to move the drug export amendments through Congress this year after opposing the legislation in previous years.

The key change at the Judiciary Committee

Continued on Page 35

Toxic Chemicals Problem in River That Caught Fire

The National Wildlife Federation (NWF) and the Ohio Wildlife Federation (OWF) last week released a comprehensive study of water quality in Ohio's Cuyahoga River that found widespread pollution in the river by toxic substances.

The two-year Cuyahoga River Study, conducted by NWF and OWF, examined the sources and effects of toxic substances in the Cuyahoga River and its major tributary, Tinkers Creek.

The study finds that toxic materials in the Cuyahoga seriously degrade water quality and limit fish and other aquatic life. Moreover, the study reports that the regulatory programs intended to control the discharge of toxics to the river system are generally ineffective.

The study makes sweeping recommendations for control of toxic discharges in Ohio and for improving water quality in the river and its tributaries.

In 1969 the Cuyahoga attracted national attention when the river caught fire. According to the report, the kind of pollution that caused the Cuyahoga to catch fire no longer exists, but pollution by toxic substances has become a hazard. Among these toxics are cyanide, benzene, and trichloroethylene.

Other highlights of the report by NWF and OWF are:

- Over 700,000 pounds of toxic metals and 90,000 pounds of toxic organic compounds are discharged into the river and its tributaries each year by the major industrial and municipal wastewater dischargers.
- Major industrial and municipal dischargers

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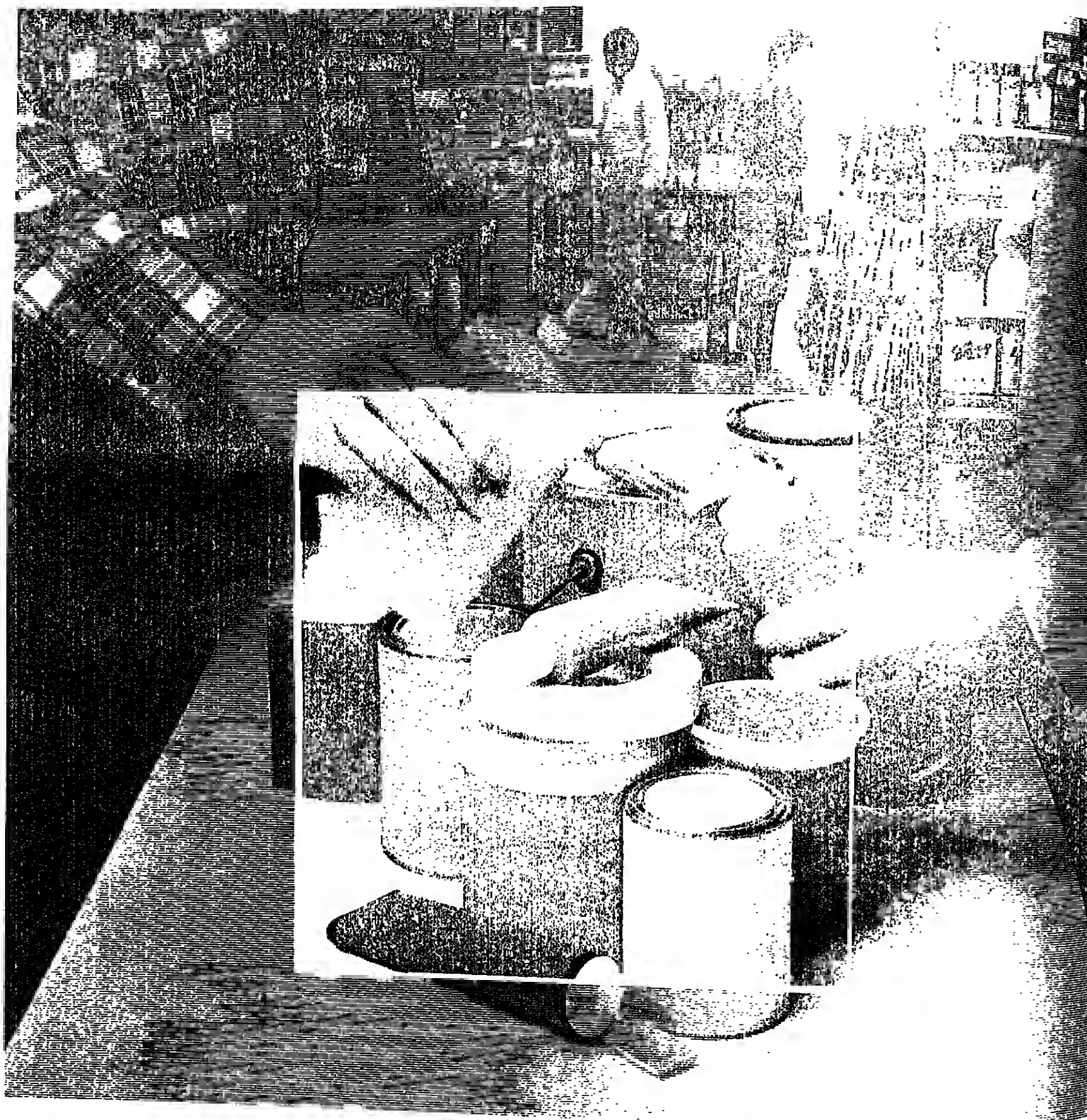
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The Little Chemical Giant

NITROPARAFFINS ON STREAM: W.R. Grace & Co. has started production at its new nitroparaffins plant at Deer Park, Tex. The plant will produce nitromethane, nitroethane, 1-nitropropane and 2-nitropropane, representing Grace's first step into this specialty area. Expenditures for the nitroparaffins facility represent the company's largest single investment in specialty chemicals.

Specialties No Panacea, Says EniChem Executive

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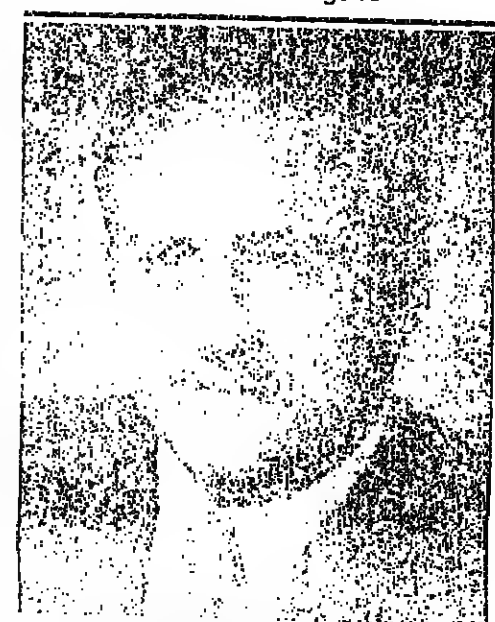
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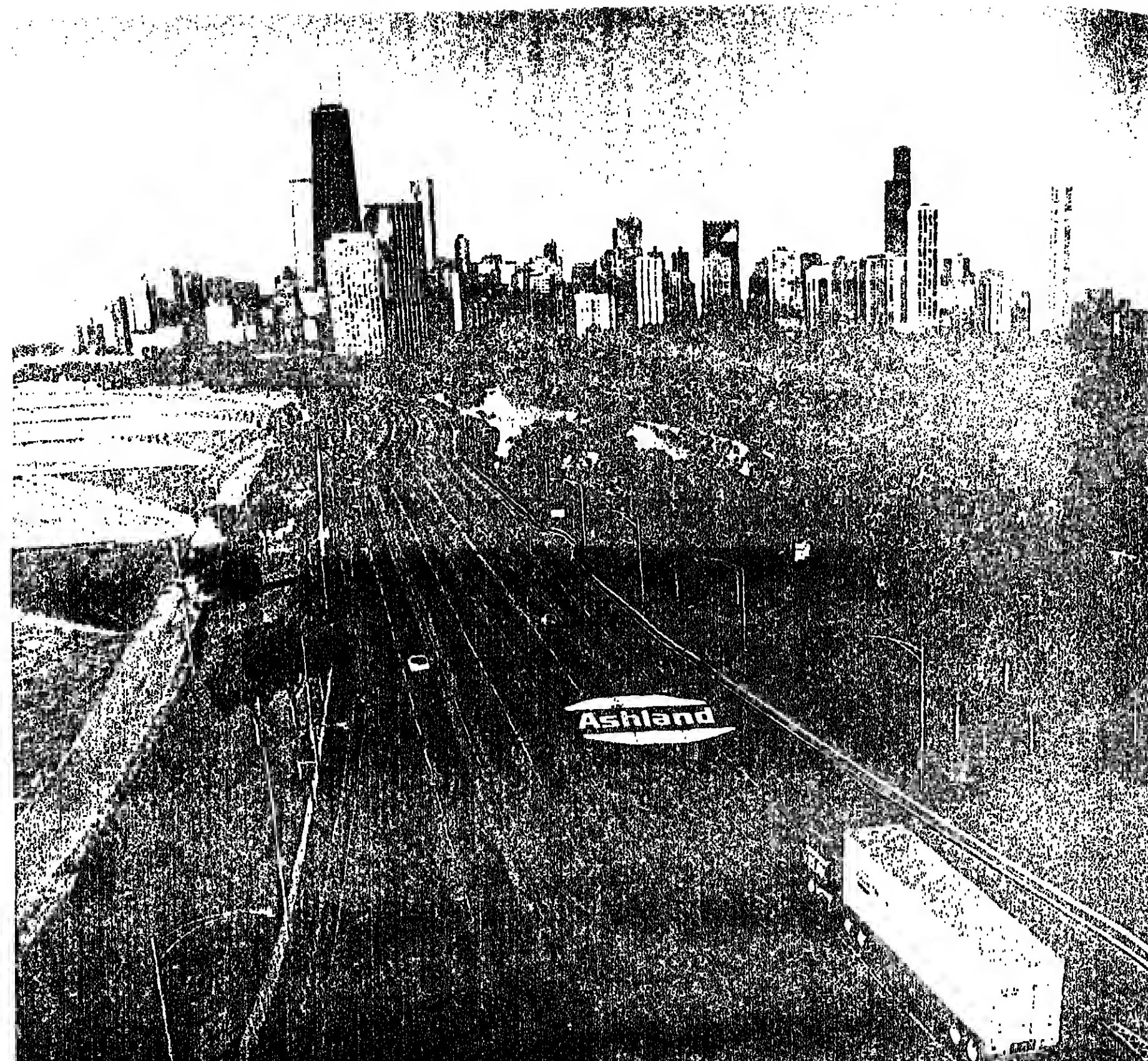
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News Capsule

Dexter Buys RPI

Dexter Corporation has completed the acquisition of Research Polymers International Corporation of Grand Prairie, Tex., for an undisclosed amount of cash. RPI produces thermoplastic polyolefin compounds, with annual sales expected to reach approximately \$35 million this year. RPI will continue to operate under current management as a division of Dexter's specialty materials group.

Sterling Sells Unit

Sterling Drug Inc. says it has reached agreement to sell substantially all the assets of its Hilton-Davis Chemical Company subsidiary to H.D. Acquisition Corporation, a newly-formed corporation owned by Philip E. Knutson, who has interests in plastics, chemicals and machinery.

Du Pont Plans Facility

Du Pont Tau Laboratories, a manufacturer of photomask products used to make integrated circuits, is building a new photomask manufacturing plant near Austin, Tex., to meet demand from the semiconductor industry in the Southwest. The 30,000-square-foot facility is expected to be in operation in mid-1987.

Air Products Sets Date

Air Products & Chemicals Inc. says it will begin production of high-density polyethylene "Airopak" barrier containers at a new facility in York, Pa., by January 1987. The company will market the containers to producers, packagers and distributors of paint-related solvents, pesticides, cleaning compounds, auto additives and other petroleum or hydrocarbon-based products in the Northeast.

Airco Builds Plant

Airco Industrial Gases is building a new \$4 million carbon dioxide plant in Baltimore, Md. The 180-ton-a-day plant is slated for startup in May 1987. Liquid product produced at the new site will be sold in the Northeastern US primarily for food freezing/chilling, beverage carbonation, and a variety of industrial applications.

IDC Opens Laboratory

International Dyestuffs Corporation has opened a new warehouse and customer service laboratory in Johnstown, N.Y., to service the company's dyestuffs and pigment markets in the Northeast. IDC supplies colorants to the textile, paper, leather, ink and plastics industries.

First Miss. Unit Expands

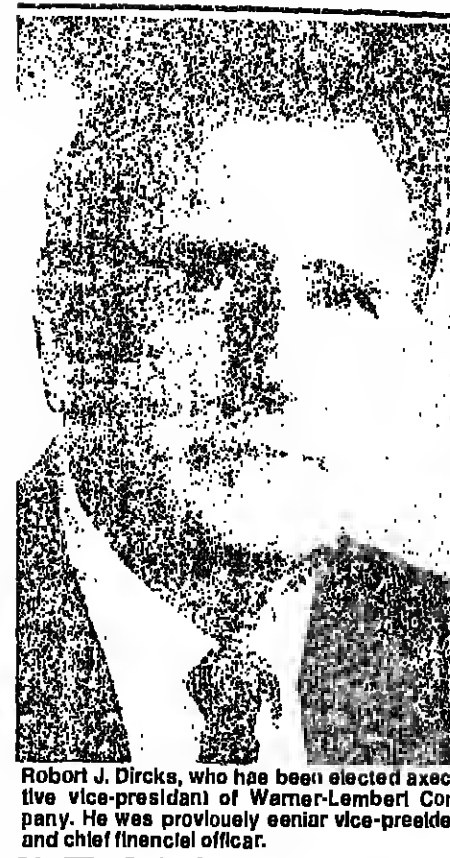
Quality Chemicals Inc., a wholly-owned subsidiary of First Mississippi Corporation, plans to double its current plant capacity by the end of next year. Quality Chemicals is a custom manufacturer of pharmaceuticals and fine organic chemicals.

Celanese Methanol Moves

Celanese Canada, Inc., and Alberta Gas Chemicals, Ltd., completed the first-ever shipment of methanol by pipeline last week from Alberta to Eastern Canada. The methanol was shipped through the Cocolin Pipeline System, which is operated by Dome Petroleum, Ltd., through its affiliate Cocolin Pipe Line, Ltd., on behalf of Dow Pipeline, Ltd., AG Pipelines (Canada), Ltd., Petro Canada, Inc., and Shell Canada Resources, Ltd.

Warner-Lambert Sues

Warner-Lambert Company, Morris Plains, N.J., has filed suit in US District Court for the Northern District of Illinois against My-K Laboratories, Inc., Skokie, Ill., charging unfair competition by allegedly imitating the trade appearance of Warner-Lambert's "Benylin" cough syrup. My-K Laboratories formerly operated under the name Bay Laboratories, Inc.



Robert J. Dircks, who has been elected executive vice-president of Warner-Lambert Company. He was previously senior vice-president and chief financial officer.

Norsk Hydro To Go Ahead On Magnesium

Norsk Hydro formally announced its decision last week to build a \$200 million (US funds) magnesium plant in Quebec, Canada. "I am pleased to announce that Norsk Hydro has made the final decision to build a magnesium plant in Canada," said Mr. Torvild Ankvaag, president of the Norwegian company, the largest in Norway, at a press conference in Montreal.

The project had previously been recommended by the company's board of directors, and has now been finally approved by the Norsk Hydro corporate assembly.

The plant will be built in the Beauport Waterfront Industrial Park on the St. Lawrence River. Construction is scheduled to begin in the spring of 1987, and will be completed in the first months of 1989. The plant will operate with Canadian management and staff.

The Beauport plant will have an annual production capacity of 100,000 metric tons.

USX Studies Restructuring; Icahn Bid Expires

The \$31-per-share bid by Carl Icahn for USX Corporation (formerly United States Steel Corporation) expired last Thursday without any word from the New York financier and corporate raider about his further intentions.

Officials of USX had met with Mr. Icahn during the week. Neither party divulged anything about these conversations, but Mr. Icahn earlier had stated that if what he termed his friendly offer for the diversified steel, chemicals and petroleum company was not accepted, he would consider launching a tender offer to the company's stockholders.

Mr. Icahn left the door open for a friendly settlement by indicating that if USX were restructured in a way adequately beneficial to stockholders, he would drop his attempt to acquire the company.

Two weeks ago USX took its first big restructuring step by arranging the spin-off of its chemicals division by transferring its assets to a new company called Aristech Corporation, which eventually will be held entirely by the public. Aristech will initially purchase 32 percent of its shares from USX, but these will be retired.

DuPont, Allied-Signal Record Higher Income

Among the major chemical companies, the strongest earnings increases last week were reported by Allied-Signal Inc., E.I. duPont de Nemours & Co., Celanese Corporation and American Cyanamid Company. Others reporting increases included Pennwalt Corporation, GAP Corporation and Wilco Corporation.

DuPont's third-quarter net income of \$343 million was 25 percent higher than a year ago and was achieved despite the adverse effect of lower petroleum prices on Conoco Incorporated. Most of Du Pont's chemical and specialty products businesses posted strong results, reflecting an improved cost structure and strength overseas, states Richard W. Heckert, chairman. After-tax operating income in chemicals and specialty products was up 65 percent from a year ago, Mr. Heckert noted.

Earnings of Celanese in the third period amounted to \$50 million, an increase of 17 percent from a year ago, as chemicals, fibers and specialties all made significant contributions, according to John D. Macomber, chairman and chief executive officer, who also cited ongoing strength in worldwide sales of engineering resins.

Allied-Signal registered record third-quarter

net income of \$164 million, an increase of 73 percent from \$95 million a year ago.

Edward L. Hennessy, Jr., chairman and CEO, said that income for the company's three operating segments more than doubled from \$70 million to \$153 million, primarily as a result of improved aerospace sales and higher earnings for the automotive aftermarket and fibers businesses.

American Cyanamid's earnings from continuing operations and net earnings in the third quarter were \$44.8 million, up 29 percent from \$34.8 million a year ago. George J. Sella, Jr., chairman and CEO, said that the medical business profited from strong sales growth of pharmaceuticals in the US and in international markets.

Worldwide sales of Cyanamid's agricultural products were about even in the third quarter compared with a year ago despite the company's withdrawal from the diammonium phosphate business on June 30, Mr. Sella notes. He cites a better performance of animal and pesticide products.

Most notable of all was the improvement in Pennwalt's results, as the company recorded earnings of \$13.9 million versus a loss of \$7.8 million in the 1985 period.

Excluding the negative effect in 1985 of restructuring charges, operating earnings

Continued on Page 26

Petro-Lewis Bailed Out

FPCO Incorporated, New Orleans, La., a company formed at the direction of Freeport-McMoilan, Inc., has signed a definitive agreement to participate in a plan of reorganization for Petro-Lewis, Inc. as part of Freeport-McMoilan's effort to acquire Petro-Lewis.

Petro-Lewis is a limited oil and gas partnership that has been facing bankruptcy because of the decline in oil prices. Freeport-McMoilan has a tender offer outstanding for Petro-Lewis, but the offer has fallen short of the majority sought because certain holders of Petro-Lewis bonds have declined to tender their securities. Participation in the Petro-Lewis reorganization is expected to offer inducements for these holders to tender their securities.

FPCO said that it has accepted for payment all units of beneficial interest in American Royalty Trust, a Petro-Lewis affiliate, tendered to date, and that it has extended through last Friday, October 24,

the offer for the trust units.

FPCO also has purchased the Petro-Lewis subsidiaries that manage American Royalty Trust and own the properties of the oil and gas interests held by the trust.

FPCO also announced that because the minimum tender condition in its offer for Petro-Lewis debt securities has not been satisfied, FPCO is not purchasing Petro-Lewis debt or equity securities at this time.

FPCO is urging bond holders to tender and said it hopes that enough bonds are tendered so that it will be economically attractive for FPCO to close on the acquisition, allowing Petro-Lewis "to avoid the costly ordeal of bankruptcy."

Accordingly, FPCO extended until 5:00 p.m. last Friday its cash tender offer for all outstanding debt and equity securities of Petro-Lewis, and also extended withdrawal rights with respect to the offers for the debt securities until that date.

NL Industries Turns Down Bid for Chemical Operation

NL Industries, Inc., New York-based producer of specialty chemicals and coatings materials and provider of petroleum equipment and services, last week rejected a proposed leveraged buyout of its chemicals operation for about \$920 million.

Instead, the company disclosed it was exploring a plan whereby its petroleum services and chemicals units would be spun off separately to holders of different classes of the company's stock.

NL said that the proposed buyout by an unidentified financial institution called for payment of \$13.25 a share in cash and \$2 a share in 11.5 percent preferred stock, an amount that would equal somewhat over \$915 million for the unit's 80 million Series C shares.

The plan NL is exploring would result in the separation of its petroleum services and its chemical operations by early 1987, several months earlier than it would have been accomplished through a previously announced proposal.

The proposed separation would result in present NL Industries common and Series A preferred stockholders owning NL's

petroleum service operations and the holders of NL's Series C preferred stock owning the chemical business.

It is intended, NL says, that after the separation, the shares of both companies would be publicly traded. Completion of the transaction would require, among other things, the processing of filings with Securities & Exchange Commission, approval of a majority of the directors of NL Industries not affiliated with Amalgamated Sugar Company, acting upon the advice of an independent investment banker selected by them, and the approval of NL Industries' common and preferred stockholders.

Dallas, Tex., investor Harold Simmons, who controls 5 of NL's 9 board seats, would also receive 5 of NL Chemicals' 9 seats after the spin-off. He is a principal in Amalgamated Sugar.

Mr. Simmons' 5 seats on the board voted against the proposed buyout by a large financial institution in a vote that was 6 to 2, with one director not participating.

In voting against the institution's proposal, Mr. Simmons said that he desired that "there be an opportunity for NL Chemicals to demonstrate its value as an independent company rather than selling the chemicals business at this time."

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OILS, FATS & WAXES

Palm Oil Hits Eight-Month High; US Buyers Switching to Soy Oil

The price of palm oil is rising appreciably, hitting levels that have not been seen since last February. Palm pricing is joining coconut and soybean oil pricing in the strengthening that has been taking place throughout the world oils market for the past several weeks.

"The coconut oil market has been very strong, which nobody really expected," says a trader, who notes that palm is now following coconut oil's lead. That belief mirrors those of most of the traders in the market today.

Another surprise is lower-than-expected production of palm oil in Malaysia for the months of September and October. Estimates place production for each of those months at approximately 50,000 tons less than last year's figures for the same months.

Although there are no shortages, the glut situation that has dampened prices for much of the year is not now as severe as people thought it would be. Production levels for the rest of the year are also expected to be below those of last year.

Demand for palm oil in the US is falling noticeably because of these high prices, sources say. Both spot and forward markets here are described as quiet, with many consumers turning their attention to US soybean oil.

US TRADING PALM FOR SOY

Sources believe that many US oil consumers are trading their palm for soy oil. Consumers are said to be selling their forward positions on palm oil, bought at the very low prices of several months ago, and taking their profit in today's strong market. Subsequently they are satisfying their oil needs with soybean oil, sources say.

The relative apathy of the US market for palm oil has not been found throughout the world market. India bought heavily in the last two weeks, helping to keep the strong market buoyant. Many traders consider it a healthy sign for the market that India chose to buy in the midst of firm pricing and upward movement. This indicates that palm is not just experiencing a brief rally which world consumers are expecting to end soon, sources say.

Malaysia is apparently "comfortable going with the market flow" to higher prices, says a trader. He points out that, while the Malaysians cannot be pleased with a slowdown in US buying, they have developed other markets to the point that they need not cater to the needs of the US market. Some of

these other markets include India, Pakistan and the USSR, the trader says.

Adding to the Malaysians' comfort with raising its pricing is the easing of the glut situation. Lower production for this month and last month is attributed to several factors, most notably the reduction of efforts by farmers to produce a bumper crop of a very

PRICES TRENDLINES

WEEK ENDING OCT. 24, 1988

CHANGES/UP

Coconut oil, NY, 24¢ per lb.
Cottonseed, 41% bulk, Memphis, \$5 per ton
Cottonseed oil, Valley, 1/4¢ per lb.
Grease, white, choice, tanks, divd., NY, 1/4¢ per lb.
Palm oil, NY, 1/4¢ per lb.
Peanut oil, Southeast (restricted), 2¢ per lb.
Soybean, 44% bulk, Decatur, \$5 per ton
Tallow, inedible, fancy guar., tanks, divd., NY, 1/4¢ per lb.
Tallow, inedible, fancy bleach, tanks, divd., NY, 1/4¢ per lb.

CHANGES/DOWN

Com oil, Midwest, 1/4¢ per lb.
Lard, loose, bulk tanks, Chicago divd., 1/4¢ per lb.

OILS, FATS INDEX

The Oils, Fats & Waxes Index reflects the prices of 11 representative materials in this sector and the quantity of each produced in 1985.

Oct. 24, 1988 80.49
Oct. 17, 1988 78.46
Sept. 28, 1988 81.59
Oct. 25, 1985 83.05

Chemical Prices Start on Page 40

low priced product. Their investment in fertilizer, for instance, is widely thought to be less this year than last. Other factors include tree stress, or "tired trees," resulting from heavy yields last year, and lower than usual rainfall in Malaysia during this year.

VEGETABLE OILS

LINSEED OIL — The linseed oil market has been resisting the downward pressure normally associated with the harvest. This is explained mainly as the result of uneven harvesting activity, delayed and interrupted by rain throughout the month of September.

"Typically, we've had a major part of the harvest done by now," says an industry source, "but this year the harvest has been strung out from the end of August until now." The result, he says, is that refiners have been fed a slow, constant supply of oil, preventing the softening effect on the market of a sudden flood of material.

PALM KERNEL OIL — The price of this oil has gone up substantially, to currently quoted levels of 18 1/4¢ to 19 1/4¢ per pound in bulk quantities, c.i.f. basis, at US ports. US and European dealers are trading the material, but US consumer interest is "almost dead," says a trader. "The market is overpriced," says another, who expects it to come down from these levels.

SOYBEAN OIL — The price of soybean oil remains strong, despite a relative lack of consumer interest in the US, sources say. The price is maintaining its firm standing largely because of the support felt in the markets for all of the major oils.

Soybeans are enjoying good export demand at the Gulf, according to an industry source, who says that domestic demand is also high, fueled by a good crush rate. The combination of bean demand and a firm world oil market is expected to keep soy oil pricing at its current level for the foreseeable future.

TUNG OIL — The price of this oil is quoted

Continued on Page 18

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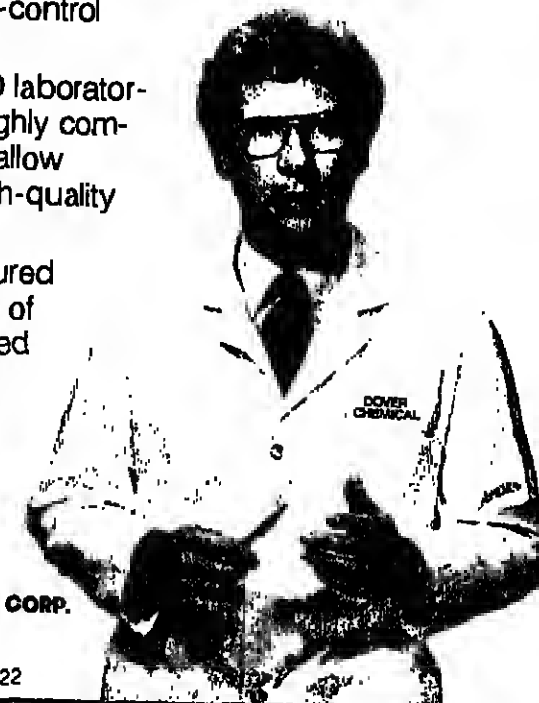
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MARKET CLOSE OCT. 24, 1988

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Coconut oil, NY lb. .21
Com oil, Pacific lb. .NA
Com oil, Midwest lb. .18 1/4
Cottonseed oil, Valley lb. .18
Cottonseed oil, Minneapolis lb. .25
Palm oil, NY lb. .18
Peanut oil, Southeast (restricted) lb. .20
Soybean oil, Decatur lb. .14 1/4

REFD. VEGETABLE OILS

Coconut oil, L.W., NY lb. .25
Com, jumbo tanks lb. .25
Cottonseed oil, jumbo tanks, NY lb. .25 1/4
Peanut oil, jumbo tanks, NY lb. .27 1/2
Soybean oil, NY lb. .19 1/2

OILMEALS

Cottonseed, 14% bulk, Memphis ton \$140
Linseed, extracted, 34% bulk, Fargo ton \$106
Peanut, 50% bulk, AL, Alabama ton \$185
Soybean, unrefined, 44% bulk, Decatur ton \$181

FATS & GREASES

Grease, white, choice, tanks, divd., NY lb. .10 1/4
Grease, yellow maximum 10% free tanks lb. .9
Lard, loose, bulk tanks, divd., Chicago lb. .17
Tallow, inedible, fancy, tanks, divd., NY lb. .12 1/4
Tallow, inedible, bleach, tanks, divd., NY lb. .12

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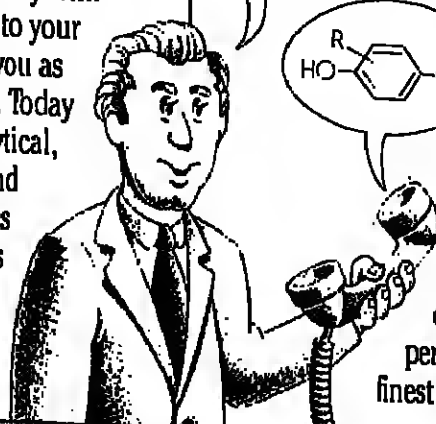
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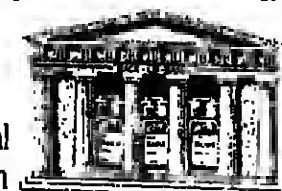
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OILS, FATS & WAXES

Continued from Page 11

between 31c. and 33c. per pound in tanks, imported into New York. The market has been fairly quiet, sources say, with ample supplies helping to keep the price down.

"We were told that once the price came down and stayed down for a while, tung would recover its market. We're still waiting for people to come back to it, but the signs aren't there right now," a source says. Buying is said to be largely hand to mouth, with consumers taking "only what they absolutely need," according to an industry source.

FATS & GREASES

TALLOW — This market has been strengthening lately, marked by a resurgence of domestic consumer demand. A number of US exporters have been in the market to cover sales made one to two months ago, sources say.

Apparently, the current ease in production caught some exporters off guard, who had made earlier sales based on higher production expectations. Consequently, they have had to buy fairly heavily to meet those commitments, according to an industry source. Strong domestic buying at the levels brought up by the exporters is the source of the current market strength, sources say.

WAXES

CARNAUBA — The price of number one yellow Carnabyba is quoted between \$1.95 and \$2.05 per pound, and yellow number one Ceara is quoted between \$1.75 and \$1.90 per pound, both in bags, in too lots.

Refined North Country number two wax is quoted between \$1.55 and \$1.65, and North Country number three, centrifuged, is quoted at \$1.10 per pound, both in bags, in too lots.

The market has been very stable, sources say, with buying taking place at normal or slightly below normal volume. Readily available supplies of carnauba are expected to keep the pricing from rising above current levels for at least the next several weeks.

MISCELLANEOUS

METHYL ESTERS — Henkel Corporation has announced that it is raising the price of its 12-18 grade methyl esters. The price

will be increased from 25c. to 33c. per pound in tanktruck quantities, effective November 1.

Thermoplastic Line Introduced by BASF

BASF Corporation has formed a thermoplastic polyurethane elastomer business specializing in the market development and sales of the company's TPU "Elastollan" for the injection molding, blow molding, and extrusion industries in the US.

According to Manfred Buller, the company's group vice-president for polymers, the formation of this new business unit "reflects BASF's continuing commitment to US markets." BASF has sold "Elastollan" in European and other markets for more than 20 years, he adds.

"BASF" is offering its "Elastollan" products in the US as a consequence of steadily growing demand for TPU in blow molding, injection molding, and extrusion markets worldwide," Mr. Buller says.

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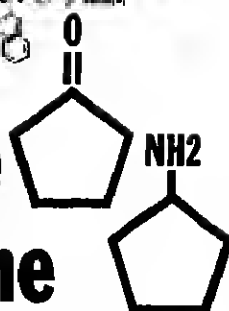
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AROMATIC ORGANICS

Phthalic Advance Holds Firm On Reports of 'Snug' Market

Phthalic anhydride producers say that the October 1 industry-wide price increase has been successful. Higher feedstock costs, supply disruptions, and strong export demand are said to have provided support for the move.

"The price is holding firm" at the 1 cent per pound higher level, says one producer, and another comments that "this is the most successful increase in some time."

"Phthalic anhydride has passed the tight state," asserts the latter source, as only two of the six production facilities in the country have not experienced some production curtailment over the past several weeks.

"The market is very snug," agrees another producer. "We've been totally sold out, and I believe (one or two other producers) are in the same boat." Among the producers, it is reported that Exxon Chemical Americas and Sterling Chemicals have curtailed production this month due to catalyst changes, and that Koppers company experienced five days of downtime last month due to a mechanical problem.

Most seriously, Stepan Company has only recently resumed normal production at its 170-million-pound-per-year Millsdale, Ill. site. Production was hampered for over two months by a blower problem that necessitated equipment replacement. "We were barely running" until the problem was solved, says a company spokesman.

SUPPLIES ALLOCATED

It is said that Exxon is limiting the amount of material its customers can buy because of the low supply availability. One producer says that Exxon was prompted by the market's tightness to obtain a 1-cent-per-pound increase October 1 (on top of the industry-wide move) in the company's contract price spread over feedstock orthoxylene costs.

It is believed that Exxon, for the most part, is the only phthalic anhydride producer with contract pricing tied to a definite spread over orthoxylene. Exxon's move this month is said to be related to last quarter's industry-wide price move in which, at a time when orthoxylene prices were stable, Exxon did not participate.

This month's industry-wide 1-cent-per-pound increase has not met with the controversy of the third quarter move in part because feedstock costs have risen in recent months. Producers say that, essentially, they have passed through higher orthoxylene costs.

Orthoxylene pricing, over the course of the third quarter, firmed from a 12 1/2-cent to 13-cent-per-pound level to a range between 13 1/2 cents and 13 3/4 cents per pound.

Phthalic anhydride producers say that

higher orthoxylene costs have been supported by overseas production disruptions. "The Soviet Union was exporting large amounts (of orthoxylene) to the US, but their plant went down," says a source. In addition, it is reported that a production problem in Mexico has compelled that country to import material.

Nonetheless, producers stress that they do not view movement in phthalic pricing as necessarily reflecting the feedstock picture. Supply-demand considerations are

PRICES TRENDLINES

WEEK ENDING OCT. 24, 1986

CHANGES/UP

None

CHANGES/DOWN

None

AROMATICS INDEX

The Aromatic Organics Index reflects the prices of 14 representative materials in this sector and the quantity of each produced in 1985.

Oct. 24, 1986	167.84
Oct. 17, 1986	167.84
Sept. 26, 1986	167.84
Oct. 25, 1985	167.84

Chemical Prices Start on Page 40

paramount in pricing matters, says one producer, and others say they like to believe that orthoxylene-tied contract formulas are in their way out. "Phthalic ought to have some intrinsic value in the marketplace," one producer says.

Producers report steady business domestically, and a sharp increase recently in export activity. According to Bureau of Census, 5.164 million pounds of material were exported during the month of August, up sharply from previous months. For the first seven months of the year through July, the entire amount exported was only 3.680 million pounds.

Producers report heavy exports from the West Coast to Far East destinations such as Taiwan and Mainland China. Producers say that low freight rates and the weakening of the US dollar have enabled suppliers here to meet demand from a Far East that is "hollering for phthalic."

One producer says that freight rates as low as 3 cents per pound for material moving from Chicago to Taiwan have been available for several months because of the "tremendous glut of empty containers" in the West.

AROMATIC ORGANIC IMPORTS: AUGUST

CENSUS BUREAU REPORTS ON THE TOP 24 AROMATICS.

	AUGUST	JULY
	QUANTITY	VALUE
Alkylphenols	213,883	720,128
Aniline	2,188,778	715,480
Benzene	14,423,388	8,815,985
Benzoin acid	173,842	58,181
Coaltar	13,786,023	1,088,750
Cresol oil	1,258,808	988,830
Cresols, o-m, p-	385,720	328,585
Cumene	18,208,433	1,758,308
Cyclohexane	4,674	8,740
Cyclohexanone	—	—
Fumaric acid	275,872	108,188
Maleic anhydride	888,587	248,488
Naphthalene	1,482,587	588,701
Naphthalene AS & derivatives	788,621	880,890
Phenol	808	8,214
Phthalic anhydride	928,125	188,882
Picric acid	83,074	82,807
Styrene monomer	24,307,928	3,373,308
Toluene	20,477,432	14,384,924
Vanillin	1,082,843	1,990,080
Xylene	8,830,898	4,384,113
o-Xylene	1,512,982	1,841,085
p-Xylene	2,288,947	3,088,947
Xylenol	2,000	4,883

*Includes pitch of coaltar, blast furnace, tar oil, etc.

AROMATICS

em US as a consequence of heavy US imports of Far Eastern goods.

The weakening of the US dollar in relation to Far Eastern currencies has been a more recent phenomenon that has provided the impetus for the US export surge, producers say.

They expect export levels to continue to run very high for the balance of the year, and believe the total for the year could well double last year's 13.0 million pounds.

BTX — Spot benzene pricing held fairly steady last week between 83c. and 84c. per gallon. Sources expressed uncertainty over the likely path pricing will take in the coming weeks.

There appear to be several factors supporting firm pricing, including Organization of Petroleum Exporting Countries' (OPEC) agreement to extend production controls, healthy demand for styrene, and high benzene running rates that have resulted in the postponement of turnarounds.

However, as one source says, the direction of the market often runs counter to conventional wisdom.

There was only one bearish factor the last day or two, high crude oil inventories, said a trader early last week, but this appeared able to offset a number of bullish factors.

Another trader points out that many benzene buyers loaded up prior to the industry-wide move to 85c. per gallon in mid-September, and then held off buying for quite a while.

"People felt that, with the uncertainty of OPEC, time was on the side of the buyer," he says. This prognosis has not held up, and pricing has held steady.

Spot toluene is quoted at 87c. per gallon, a price equal to the previous week's level. A source observes that octane demand in the US has been fairly healthy, but that there has been a lull in European demand. Spot xylene is quoted between 76c. and 77c. per gallon.

PIENOL — The 2c. per-pound October 1 price initiative did not succeed, and temporary allowances were instituted.

However, "operating rates are very high, and raw material pricing has been firm," says a producer, in justifying the need for a price increase.

STYRENE — The extent of the industry's price increase for November 1 is unsettled at this time. Chevron Corporation and Cosden Chemical announced price increases the previous week to 27c. per pound. It is believed that one other producer also raised its price around the same time.

Last week, Borg-Warner Corporation reconfirmed that its price is 27c. per pound less a 3c. per pound temporary voluntary allowance (TVA).

The company says that it aims to "establish a minimum selling price of 24c. per pound."

Dow Chemical USA confirmed to its customers that the company's list price is 26c. per pound.

Huntsman Chemical Corporation says it has not changed its list price from the level of 25c. per pound less a 3c. per pound TVA. Sterling Chemicals reconfirmed to its customers a list price of 26c. per pound. These prices all became effective October 1.

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October 27, 1986

CHEMICAL MARKETING REPORTER

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Toxic Chemicals Problem Continued from Page 5

ers at the cities of Akron and Cleveland are largely responsible for the discharge of toxic materials that degrade water quality and limit fish in the Cuyahoga River system.

• The regulatory programs that are intended to control the discharge of toxic pollutants to the river system, including the National Pollutant Discharge Elimination System (NPDES), are generally ineffective in the system and are poorly enforced.

• NPDES permits of many point source dischargers have been expired for several years; discharge limits for toxic materials in effective permits are practically nonexistent; and, where toxic discharge limits do exist, they are frequently violated.

Based on their study, NWF and OWP recommend that the Ohio EPA aggressively implement and enforce the Clean Water Act in Ohio. Specific recommendations include:

• Immediate reissuance of all expired NPDES permits to industrial and municipal dischargers.

• Issuance of NPDES permits that regu-

late the discharge of all toxic pollutants (including concentration and load limitations).

• Scheduling of permit reissuance based on discrete stream, river, or watershed segments so that all permits for dischargers into a given segment expire at the same time.

• Requiring industries and publicly owned treatment works with the potential for discharging toxic materials to perform whole-effluent toxicity testing following methods developed by EPA.

• Implementation of an enforcement program to ensure that expired permits are revised, that the discharge limits in new permits are strictly followed, and that all toxicity in discharges is regulated.

The study concludes that control and elimination of the discharge of toxic material from point sources in the Cuyahoga River basin, as well as assessment and ultimate elimination of the discharge of toxic materials from nonpoint sources, will result in improved water quality in the Cuyahoga River system.

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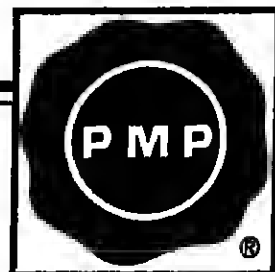
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ALIPHATIC ORGANICS

Acrylonitrile: Fiber

Continued from Page 5

Bureau, the statistical arm of the Man-Made Fiber Producers Association.

But while the US acrylic fiber industry is booming at home, the overseas market is plagued by oversupply and price erosions. These conditions have played an important factor in poor export prices for US acrylonitrile. Acrylonitrile export prices have also been seriously damaged by oversupply in the acrylic market, and by tumbling raw material propylene prices.

Ironically, the strong US market for acrylic fibers has contributed to the weak pricing situation in the overseas market. The 18 percent gain in domestic shipments so far this year, coupled with domestic cutbacks in acrylic fiber capacity, have kept US fiber producers virtually out of the export market. US fiber producers shipped 146 million pounds of acrylic overseas in the first nine months of 1988. By comparison, US fiber exports so far this year have totaled only 85 million pounds. One source says "there has been intense price competition" by foreign acrylic makers to fill the void left by the US producers. This in turn has helped drive down the international price of acrylonitrile.

US acrylonitrile export volumes have remained high this year, but prices have steadily fallen. A large portion of the decline has been attributed to falling raw material propylene costs, but exporters also blame terrible fiber prices and excess supplies of acrylic, especially in Europe. At the beginning of 1988, US acrylic producers were exporting material for over \$700 per metric ton, but that price has now fallen to \$500 per ton, C&F to the Far East following a \$20 price slide from the third to fourth quarters, according to one producer.

SPOT PRICES DRIFT LOWER

In the European market, spot prices have drifted even lower. A large influx of Eastern Bloc material, one producer explains, has helped pushed the European spot price down to \$480 per metric ton, C&F. At this price, the US producer says American acrylonitrile manufacturers are staying out of the European market. European oversupply is also attributed to the recent start-up of an acrylic plant in Turkey, and the return of Enichem's Italian facility.

Another source of weak acrylic export prices has been domestic tollers of acrylonitrile. One producer explains that earlier this year Monsanto, and later Sterling Chemical, were converting propylene and ammonia at Texas City for traders and other customers for a fee. The people tolling the acrylonitrile then sold the material in the export market, often at extremely low prices. Though the practice is profitable to the Texas City owners, it also contributed to the general decline in acrylic export values. A Monsanto official estimates that up to 40 million pounds of acrylonitrile per quarter have been tolled at Texas City. He also estimates that these traders were selling product for up to \$80 per metric ton below traditional acrylic makers' prices.

The weak acrylic prices have been very discouraging to US producers. They have been operating at high rates all year, and prices continue to slide. One company, American Cyanamid, says that because pricing on the export market is so weak, the company is pushing forward some planned maintenance work from early next year to next month, and will take a portion of its capacity out of production. Market tightness was also aided by an extended turnaround taken by Standard Oil Chemical Co. in August and September.

Now, acrylonitrile producers are faced with rising propylene prices both here and in Europe. Propylene sellers have pushed for October prices increases of up to 2 cents per pound over the current 9.5-cent levels. The acrylic makers say the downward pressure on prices applied by acrylic fiber producers makes it impossible for them to accept higher raw material costs.

n-BUTANOL - Operating rates pushing 95 percent of capacity has allowed US n-butanol

producers to launch two largely successful price increases in the second half of 1988. And since the price increases have come at a time when raw material propylene prices have been weak, producers have experienced a smart upturn in profitability as well.

In July, n-butanol producers posted a 2c. per pound price increase, and have followed

PRICES TRENDLINES

WEEK ENDING OCT. 24, 1988

CHANGES/UP

None

CHANGES/DOWN

None

ALIPHATICS INDEX

The Aliphatic Organics Index reflects the prices of 20 representative materials in this sector and the quantity of each produced in 1985.

Oct. 24, 1988	222.80
Oct. 17, 1988	222.80
Sept. 28, 1988	222.80
Oct. 25, 1985	222.80

Chemical Prices Start on Page 40

that with a 2c. per pound hike in October. One producer says "most of the July increase stuck," and the present initiative is holding up as well.

The reason for the relative success of the price advances, he says, is that "not a lot of butanol is available now, and producers can resist" customer efforts to knock the price down. This producer estimates that 1988 domestic production will reach 1 billion pounds, while current operational capacity stands at 1.060 billion pounds.

This tight balance has been created by a steady 3 percent annual increase in consumption over the last three years, coupled with a large reduction in North American production capacity. Since late 1984, Union Carbide shut a 270-million-pound unit in Puerto Rico and Celanese closed 175 million pounds of n-butanol capacity at Bishop, Tex. In addition, BASF closed an oxo-alcohols unit in Montreal, Canada, and Shell is believed to have idled some capacity at Deer Park, Tex. Bucking this trend, Carbide has been gradually expanding its Texas City, Tex. plant. The company began a 200-million-pound expansion there two years ago, and is still 80-million pounds shy of its goal.

As a result of these rationalizations, and demand increases, n-butanol plant operating rates have jumped from 70 percent of capacity or worse in 1984, to the current 95 percent level. Not coincidentally, price increases that were launched in 1984 and 1985 failed, while two increases in the past three months have been largely successful. Yet, while n-butanol producers have found recent success in their price announcements, n-butanol prices still remain below levels quoted in the late 1970's.

CARBON BLACK OIL - Market sources report that Exxon has posted a new price of \$12.50 per barrel for carbon black oil, an increase of \$1.50. The increase is effective November 13, but one source says little product is available from Exxon before then.

Observers say Exxon is the major carbon black oil producer and that most often suppliers follow its lead in pricing.

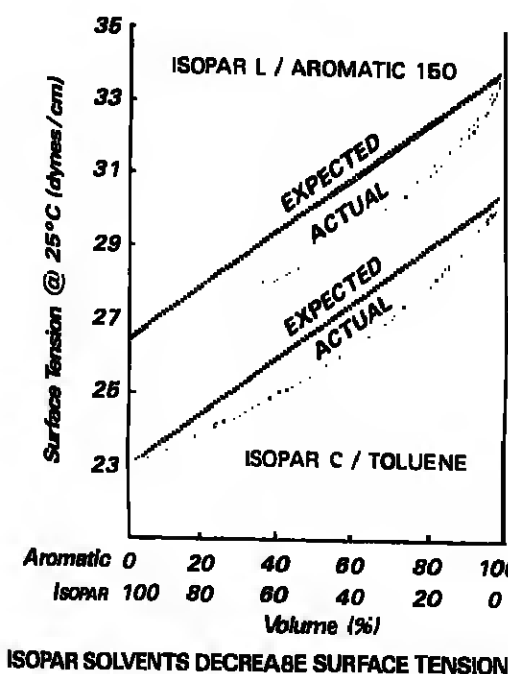
The oil was increased by a similar amount in September, when it had been priced at a long-time low of \$9.50 per gallon. Carbon black producers absorbed the September increase, but it remains to be seen if they will attempt passing one through to customers.

VINYL CHLORIDE MONOMER - The market price for the vinyl precursor remains at September's 15c. to 16c. per pound level.

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ALIPHATICS

but the market remains so tight that one producer says several spot purchases have been made at 4c. above this level. The export market price is also above domestic levels, the source says.

VCM continues to be in tight supply. Exports of monomer surpassed the billion pound mark in August, and the domestic vinyl market is booming. One monomer producer said sales of PVC last month reached an all-time high for September. The producer says there is enough monomer for domestic consumers, but importers of US VCM are scrambling to get enough product.

A producer says the supply tightness is illustrated by the current reduction in monomer "exchanges." He says producers normally borrow large quantities of VCM from other manufacturers, but that practice is now restricted.

The tight supply-demand balance would normally warrant higher selling prices, one source says, but weaker prices for PVC dur-

ing the third quarter has effectively held down VCM values. However, PVC prices have been posted for October and November, so VCM makers may get an opportunity to further firm their own selling prices.

VCM is expected to remain in tight supply for the balance of the year, sources say, even though November and December are traditionally slow demand months. Domestic demand may taper off as the housing industry slows down, but export sales should stay strong. At the same time, several plant turnarounds planned for now and later in the year should help keep supply snug. Currently, Shell Chemical has taken a three-week turnaround at its 840-million pound Deer Park, Tex. monomer facility. The plant is due back on line in early November.

Specialties No Cure

Continued from Page 7

productive capacity, Mr. Doscher says. However, restructuring should not be based only on a policy of closing plants but on a "scrap and build," program instead.

Companies need to work together more in the research and innovation areas. At the moment they were all busily paddling their own canoes into the future, Mr. Doscher says.

"European companies need to be acutely aware of who is doing what in terms of innovation, so that we don't duplicate each other's work and then find the research process leading us into building plants which the global market does not need," he says.

Douglas Rodger, a chemicals specialist at management consultants McKinsey & Co. also warned the CMRA members of the dangers of switching into specialties in an effort to improve profitability.

Diversification through acquisition, for example, has many pitfalls. The purchaser can pay so high a price that it can never recover the premium. "Many of the price-earnings multiples for US specialty companies are ludicrously high in relation to the prospects for their businesses," Mr. Rodger says.

The acquiring company also runs the risk of making a new subsidiary adapt to the parent's way of doing things, however inappropriate that may be.

"A classic example of this was the Oll Chemicals acquisition of Harshaw Chemicals and Millmaster Onyx, companies which were eventually sold again," Mr. Rodger explains.

"The main reason why you are likely to make a mess of a newly-acquired specialty business is the enormous organizational, cultural and business differences between a large, commodity-oriented chemicals company and a much smaller specialty company."

COMMODITIES MATURE MARKETS

The commodity company has a formal rigid structure geared to operating in mature markets. It is inclined not to take risks, making careful decisions backed by all departments.

"By contrast, a specialty operation requires an informal and flexible structure," he says. "Its success depends on its capability to act in an entrepreneurial manner and to take calculated risks. The whole culture of the organization has to favour individual action and fast response."

"In bulk chemicals and plastics, a supplier is pretty well forced to follow a low-cost strategy and the main decision is whether to do this on a broad front or to concentrate on particular market segments," Mr. Rodger says.

Tony Church, an investment analyst with Merrill Lynch Europe, said that in the long term, innovation is the key to the future growth of the European chemical industry, but not just in technical areas.

"Technical innovation without market innovation appears to be providing only the ingredients of success," he says.

Chemical companies in Europe have much over the last few years to reduce by closing plants and cutting production costs. But investors tend to give greater importance to short-term factors like the price of oil and exchange rates.

"In general, the potential impact of a falling dollar in weakening the competitive position of Europe in overseas markets weighs improvements in the cost of production because Europe buys its feedstocks in dollars," he explains.

Europe May Draw

Continued from Page 5

own sake, but as a byproduct or coproduct of another manufacturing process."

He expects that propylene demand in Western Europe will maintain an annual average growth rate of 2.9 percent (against 1.6 percent for ethylene) until 1990 when total consumption should reach 7.51 million tons as against 7.16 at present.

Much of the impetus behind the increase in demand comes from a steady rise in consumption of polypropylene which is expected to push up its share of the sector from 37 percent of chemical use to 40 percent by 1990.

At the same time propylene output from steam crackers (at high severity) will decrease from 5.75 million to 5.55 million tons because of a rise in use of propane and ethane feedstocks. At present naphtha accounts for around three-quarters of cracker feedstock.

Much of the shortfall, however, could be met by a rise in propylene from fluidized catalytic crackers (FCCs) used to provide high octane gasoline as Europe moves over to low unleaded petrol.

REFINERY PROPYLENE RISING

Mr. Brownlow estimates that propylene supplies from refineries for chemical use will increase by 250,000 tons to 1.25 million tons by 1990. Some of the supply gap could also be filled by a rise in low severity ethylene cracking. Despite temporary increases average net imports are expected to remain at their 1985 level of around 250,000 tons up to 1990.

Luigi Boido, managing director of Norsk Hydro Belgium SA, called for action by Western European governments to curb the flood of nitrogen fertilizers in the region from Eastern Europe and Middle East, Latin America and other parts of the developing world.

Western European fertilizer companies had done much over the last few years to bring down production costs by reducing the energy intake of their plants to make them more competitive. However, it's maintained importers have still been able to undercut prices because their plants have been built more for strategic purposes than the need to make a profit.

"Imports from outside Western Europe, at prices that can easily be classified as dumping levels, are creating the basis for a regime of unsustainable low prices all over Western

Europe," Mr. Boido says. "In this situation the problem becomes political. Nobody can in conscience accept that Western European agriculture is supplied by imports, because this would put the key of our own survival in somebody else's hands."

Since 1960 the share of the non-communist industrialized countries of world nitrogen fertilizer production has fallen from 73 percent to 36 percent. In the same period that of the Comecon countries rose from 16 percent to 30 percent and the share of the developing countries from 10 percent to 36 percent.

Global overcapacity has kept prices at a low level since the mid-70s. This year they plummeted even further as a result of the fall in the oil price and attempts by oil-exporting countries to increase sales of fertilizers to maintain revenues.

Since 1980 Western Europe has reduced its ammonia capacity by around 1 million tons to just under 14 million tons. In an effort to cut energy costs, European companies have also built large plants. Over 75 percent of Western European ammonia capacity is now provided by plants in excess of 200,000 tons.

"Western Europe continues to be a forerunner in lowering energy consumption as it was among the first to feel the shock of the increase in energy costs," Mr. Boido says.

But it's felt further plant closures are needed. He reckons that 15 to 18 percent of Western European plants are over 20 years old and as a result uneconomic in terms of energy consumption.

Explaining the reasoning behind Norsk Hydro's moves to gain a dominant position in the Western European fertilizer market through acquisitions, Mr. Boido says that the Norwegian-based company is assuming that governments will accept that a certain amount of fertilizers have to be produced locally.

"They will understand that the door cannot be opened completely to supplies from outside," he says. "There has to be a balance between local production and imports."

"Our philosophy is based on the belief that someone in Western Europe has to produce fertilizers by the best technological means available."

The company has been buying up plants that are so starved for investment they are in danger of going out of business. At the same time it is building the most technologically advanced plants to face up to the competition

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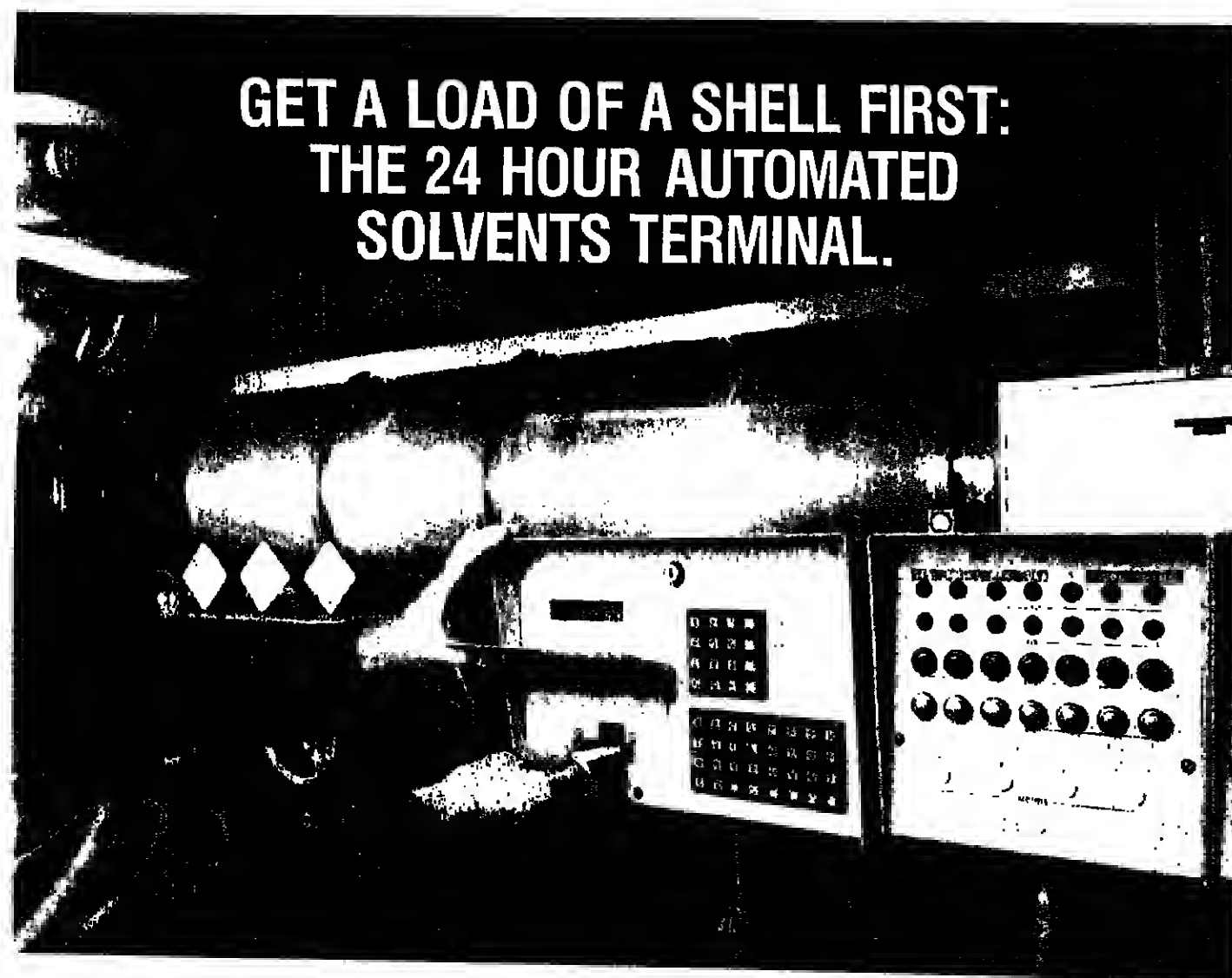
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from outside Western Europe.

Dr. Jurgen Frohling of the agrarian economy and ecology department of Bayer AG's agricultural division, expects that more companies will pull out of the crop protection market because of the soaring costs of R&D.

"The development of a modern crop protection product which meets all specifications for effect and compatibility with the environment currently costs more than 100 million Deutsche marks (\$53 million) over a period of ten years," he told the ECMRA members.

"Worldwide only a few companies can afford such an expenditure, accompanied by a correspondingly high degree of risk. In recent years many companies active in the crop protection sector have been no longer able to continue their efforts. This process of reorganization and concentration will certainly be extended into the future."

At the same time extra pressure is being put on companies by slow growth rates in some sectors. Dr. Frohling feels for example, that the world pesticides market will not expand over the next four to five years mainly because of agricultural overproduction in

Europe and North America which has driven down global crop prices.

Farmers are also much more efficient in their use of agrochemicals which has lowered consumption levels.

"Whereas 10 to 15 years ago, it was standard practice with crop protection products to be applied at between 1,000 to 3,000 grams of active ingredient per hectare, the level today is between 10 to 100 times lower."

Last year, he estimates, the world crop protection market was worth \$15,900 million, of which insecticides accounted for 31 percent, fungicides 18 percent and herbicides 44 percent. The US represented 32 percent of the world market, Western Europe 22 percent and the Far East 19 percent.

James Hickey, a consultant at Strategic Analysis, Inc. Europe in Brussels, predicted that sales of specialty adhesives in Western Europe will grow at an annual 5.5 percent until 1990 while the total adhesives market will expand by only 2 percent a year.

Reactive hot metal adhesives will grow by 9 percent annually, polyurethane adhesives by 8 percent, anaerobics and cyanoacrylates by 3 percent each and epoxies by only 1 percent.

Sales of reactive hot metal adhesives are rising rapidly mainly because they are suitable for robotization in the automobile industry — the major market for high-performance adhesives. They now have a 2 to 3 percent share of the specialty market, which is likely to increase even further if they can penetrate the aircraft industry.

A big impetus behind the growth of polyurethanes is their use in the direct glazing of car windshields. This year four million cars are being direct glazed in Western Europe. In 1987 the figure is expected to reach six million.

Polyurethanes are replacing epoxy adhesives in some sectors and in the long term could push them out altogether.

The growth of anaerobics depends a lot on the health of the European automobile industry. With Loctite of the US, one of the big players in the Western European market, automotive accounts for 50 percent of European anaerobics turnover.

Like many other specialty adhesive anaerobics are only slowly being accepted by aircraft companies.

"A lot of these high-performance adhesives do not have a history so their producers need to work with industry to get them evaluated," Mr. Hickey explains.

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DRUGS & FINE CHEMICALS

Citric Acid Imports Exert Pressure on Domestic Pricing

Citric acid imports are putting pressure on domestic selling prices, US producers of the material complain. So far this year, imports are running 17 percent ahead of last year's record-setting pace, according to the most recent government figures.

About 33.4 million pounds came to the US through August, an amount almost equal to 1987's total for the full year. Through August of last year, slightly less than 29 million pounds had entered the US. Last year's total of 43.1 million pounds was an all-time high, but 1986 imports should exceed 50 million pounds.

The leading exporter to the US, Belgium, has not increased its shipments here, sending about 10.5 million pounds through August of 1986. However, Belgium is the source of Hoffmann-La Roche's material, and that company is considered by many to be the equivalent of a domestic producer, because of its activity and the services it provides.

The next three greatest sources of citric acid imports, though, have significantly increased shipments here. West Germany has sent 7.5 million pounds through August, almost 70 percent more than last year's 4.4 million pounds. The third leading exporter to the US, Israel, has increased its total by more than 30 percent (5 million pounds, up from 3.6 million pounds), and mainland China has more than doubled its US sales, sending 3.1 million pounds to the US, 120 percent more than the 1.4 million pounds it sent through August 1985.

WEST GERMAN CITRIC

Benkiser Inc., the West German source of citric acid, expresses surprise in regard to the great increase from West Germany, and a spokesman insists that some material must be coming to the US from other countries, via West Germany. In any case, the growth indicates that imports continue to carve out a larger share of the US market.

Domestic producers are split concerning China's effect on the market. One producer thinks that China's low pricing (sold by several sources to be the lowest-priced citric acid) exerts a definite downward pressure on domestic pricing. Another producer, though, claims that even with China's increasingly active role, it still accounts for only a small percentage of the overall US citric acid market.

Imports are expected to continue increasing, at least in the short term. Producers point out that, despite the dollar's weakening, importers don't want to relinquish their market share. Also, notes one producer, many "local" plants are opening in countries such as Thailand and Turkey. With those markets closed, foreign sources are turning more and more to the US.

Despite the import activity, Pfizer has increased its domestic capacity and its capacity in Ireland. Pfizer notes that most of the increase was in Ireland, and says the domestic increase was done with an eye toward the future. A spokesman says that in the long term, imports will eventually stabilize. In the meantime, imports are expected to continue increasing.

Domestic list pricing remains the same as at the beginning of 1986. Pfizer's list price is 81 cents per pound, 83 cents West of the Rockies. Miles Laboratories' list price is 81 cents for all the US. Spokesmen will not divulge selling prices, but acknowledge the pressure from imports.

One spokesman claims that imports generally cost between 3 and 8 cents per pound less than his company's product. A source of Chl-sell price is 73 1/2 cents per pound.

US producers have not been as fortunate in their exporting endeavors as their foreign counterparts. Exports through August fell to 6.4 million pounds, down from 8.7 million pounds through August 1985. Exports to

Japan fell to 1.4 million pounds from 4.04 million pounds, and exports to Australia decreased to 1.65 million pounds. Japan and Australia are the US's largest export markets.

One producer says the export market is weak because European price competition is "intense." He adds that Europe has long had the advantage in the world market, because it became involved in citric acid much earlier than the US. As far as Japan is concerned,

PRICES TRENDLINES

WEEK ENDING OCT. 24, 1986

CHANGES/UP

Ascorbic Acid, \$1 per kilo
Caffeine, \$1 per lb.
Nicotin USP, 50c per kilogram
Niacinamide USP, 50c per kilogram
Pyridoxine HCl, \$3 per kilo

CHANGES/DOWN

None

DRUGS INDEX

The Drugs & Fine Chemicals Index reflects the prices of 10 representative materials in this sector and the quantity of each produced in 1985.

Oct. 24, 1986	211.18
Oct. 17, 1986	211.18
Sep. 26, 1986	211.18
Oct. 26, 1985	211.18

Chemical Prices Start on Page 40

he claims that China has been supplying much of its material, as part of an effort to increase business dealings between the two countries.

A rumor that Corgill was planning to enter the citric acid business remains a rumor. The company opened a high fructose corn syrup plant this year in Eddyville, Iowa, and citric acid sources say Corgill may start producing citric acid at that facility. Corgill declines comment.

Sodium citrate, the salt of citric acid, has also seen an increase in imports—4.3 million pounds through August, compared to 2.1 million pounds through August, 1985. Pricing is said to be soft.

CAFFEINE — Knoll Fine Chemicals is raising the price of its synthetic caffeine, effective November 1.

Twenty-thousand-pound shipments will cost \$5.80 per pound, up from \$4.80 per pound. The following prices will also become effective November 1: \$5.85 per pound for 10,000 pound shipments; \$5.90 per pound on 1,000 pounds basis; and \$5.95 per pound for less than 1,000 pounds.

Knoll, which imports its caffeine from West Germany, attributes the increase to the soft US dollar. Other suppliers of caffeine note that tight supplies have had a firming effect on the market (CMR, 10/6/86, pg. 23). Major reasons for the tightness are increased demand and the Brazilian drought.

Also concerning caffeine, the National Cancer Institute recently concluded that there is no association between coffee drinking and the painful breast condition known as fibrocystic breast disease (FBD).

Years ago, Ohio State University researchers alleged a connection between FBD and consumption of methylxanthines (which include caffeine). Questions about the validity of that theory arose, leading to the NCI study. NCI examined about 3,300 women, and found "no evidence of an association between methylxanthine consumption and benign breast disease (another name for fibrocystic breast disease)."

The researchers also wrote that their results are consistent with "those of several epidemiologic studies undertaken to address this issue, as well as with results from laboratory studies, which have measured physiological responses to caffeine consumption."

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CHEMICAL MARKETING REPORTER

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DRUGS & FINE CHEMS

(caffeine, theophylline and theobromine) found in coffee, tea, some colas and chocolate, and often added to respiratory and pain medications.

ENZYMES — Novo Laboratories, Inc., will be raising its contract prices for enzymes used in starch processing, effective January 1.

The new contract bulk truckload prices will be "AMG 200L" (glucoamylase), \$3.50 per liter; "Dextrozyme 225/75" (glucoamylase - pullulanase mixture), \$5.85 per liter; and "Termamyl 120L" (alpha amylase), \$1.75 per pound.

Also, contract prices for fuel ethanol grades of these enzymes will be raised for bulk truckload quantities: "Spirzyme 200L" (glucoamylase), \$3 per liter; "Liquozyme 120L" (alpha amylase), \$1.65 per pound; and "Liquozyme 60L" (alpha amylase), 85c. per pound.

Spot prices for the above enzymes will be 8 to 8 percent higher than the contract prices. Prices for truckload quantities of drums are 5c. per pound and 10c. per liter higher. Terms are net 30 days, f.o.b. Franklinton, N.C., freight equalized.

According to a spokesman, these increases are needed to obtain "acceptable" profit margins, following a three-year depression. **PHARMACEUTICALS** — India's production of pharmaceuticals has jumped 30 percent during the last year, says Satish Shah, president of Aakash Corporation. Other observers agree that India is making its presence felt in both the US and the rest of the world.

Mr. Shah also includes fine chemicals, dyes and intermediates in his growth estimation. "Bombay is on the ocean and has new piers made for higher efficiency in loading and unloading ships," he says. He continues that with the US dollar's weakness, companies are looking toward the third world for less costly material.

One reason for lower costs is said to be India's relatively cheap labor. For example, Mr. Shah estimates that a chemist who makes \$30,000 a year in the US would earn \$8,000 a year in India. Likewise, factory workers who earn \$20,000 a year in the US could expect to earn \$2,800 a year if they worked in India.

Mr. Shah adds that Prime Minister Rajiv Gandhi's policy of "opening up" trade relations has helped India carve out a larger share of the worldwide chemical market. Among these "openings" is a widespread reduction of import tariffs.

Acetaminophen, iodine and penicillin are examples of chemicals in which India has become more active recently. In particular, India is sending more penicillin to the US. Psyllium seed husk, a product which comes to the US exclusively from India, is coming here in dwindling amounts in 1988.

J&J Arthritis Drug Discontinued in UK

Johnson & Johnson says it is discontinuing sales of the arthritis drug "Suprol" in the United Kingdom, but its McNeil Pharmaceutical division will still market the widely used prescription painkiller in the US.

"This decision has been made on commercial grounds," the company's Ortho-Cilag subsidiary said in letters to physicians and drug regulatory authorities in the UK. The company attributed its decision to poor sales volume in the UK market.

Johnson & Johnson, which does not disclose figures on sales and users, said it continues to believe that "Suprol" is a safe and effective drug in the hands of physicians with proper prescribing information.

Public Citizen Health Research Group charged in September that "Suprol" had caused kidney damage in hundreds of users.

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Drug Export Action

Continued from Page 3

against manufacturers, and current Federal law provides no source of compensation.

Faced with costly damage awards, manufacturers have raised prices of some vaccines by 500 percent in the past two years. Since 1984, the number of companies licensed to make vaccines has dropped from 15 to three, creating serious shortages of some products.

According to the bill, any child suffering a known adverse reaction within a certain time after receiving required vaccines against polio, measles, mumps, rubella, diphtheria, tetanus or whooping cough would be automatically eligible for compensation by petitioning the Federal courts.

But in a letter to Sen. Orrin Hatch (R-Utah), the Senate sponsor of the omnibus health package, the Justice Department said it would recommend a veto because the vaccine provision would create "a major new entitlement program for which no legitimate national need has been demonstrated."

Department of Health and Human Services also strongly opposes the vaccine measure, but HHS supports the pharmaceutical export amendments as well as most other components of the package.

The drug export provision, proposed in 1985 by Sens. Hatch and Edward Kennedy (D-Mass.) would allow US companies to export drugs to countries that have well-developed procedures for the approval of pharmaceuticals.

US pharmaceutical houses whose products

are approved in foreign countries earlier than in the US are prevented by law from supplying those foreign markets from their plants in the US.

They are forced to either build plants abroad or license out their products, and valuable American technology, to foreign manufacturers. As a result, the industry argues the US economy is deprived of investments, jobs and exports.

Lifting the ban on drug exports, according to a PMA analysis, could create 8,000 to 10,000 additional jobs and \$400 million to \$500 million additional exports in five years.

Sen. Hatch said the "landmark legislation" would help "in improving the competitive position" of US pharmaceutical companies in overseas markets.

Mr. Mossinghoff credited Sen. Hatch, the chairman of the Senate Labor and Human Resources Committee, with gaining congressional approval of the drug industry's top legislative priority.

"Without chairman Hatch's persistence and political acumen, this bill never would have been brought up on the Senate floor," says the PMA president. "He pushed it over the top."

A PMA spokeswoman says the organization does not have a position on the vaccine measure because its member companies are split on the issue, but the industry strongly supports the overall drug package.

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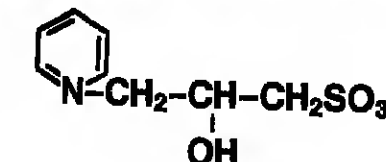
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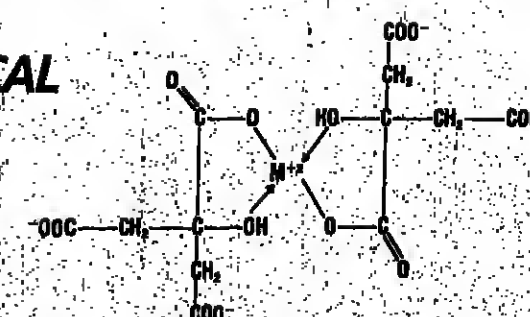
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CHEMICAL MARKETING REPORTER

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Waste Rule for Military Continued from Page 4

water standards, but had not installed appropriate groundwater monitoring wells to gauge the extent of the problem because this site would be exempt from federal or state standards under the proposed rule," Rep. Synar says.

"We also found that one contractor at the Hanford reservation in Washington State used the proposed rule to classify every single liquid waste stream at the Hanford Reservation as byproduct, which the proposed rule would exempt from federal and state hazardous waste regulations," he adds.

Rep. Synar notes that DOE's proposed rule was opposed by every single one of the 32 agencies, organizations and individuals who commented on it.

"The Nuclear Regulatory Commission said that the proposed rule probably was illegal and warned that it could wreak havoc with many of the Commission's regulatory programs for the private sector. Environmental Protection Agency also opposed the rule. Frankly, in the face of all this opposition, I don't know why DOE hasn't withdrawn the rule. Instead they've been 'reviewing' it since last March," Rep. Synar says.

RULE WOULD EXEMPT DOE

In effect, the proposed rule would exempt DOE mixed waste from the Resource, Conservation and Recovery Act (RCRA) and state hazardous waste laws on the basis of how the waste is produced and irrespective of whether the waste contains chemically hazardous components.

The rule would accomplish this by defining as "Byproduct Material" all of DOE direct process wastes. RCRA exempts Byproduct Material from its requirements.

NRC has interpreted Byproduct Material to include only radioactive materials. But DOE's proposed rule attempts to "clarify" the term Byproduct Material so that it applies to nonradioactive hazardous as well as radioactive components of mixed waste.

Under the rule, there could be two DOE mixed waste streams with identical chemical and radioactive properties, but because of how they were produced, one could be classified as mixed waste and subject to RCRA, the other could be classified as

Byproduct Material and exempt from RCRA. In their letter, the 70 legislators ask Mr. Herrington to withdraw the rule and, in the place, issue immediate policy guidance that brings DOE into line with what NRC and EPA are doing for the private sector.

NRC and EPA have decided to address both the chemical as well as radioactive hazards of mixed waste and they have taken the position that any mixed waste that contains chemically hazardous components that should be subject to RCRA and state laws, are to be subject to RCRA and state laws.

"Congress clearly intended RCRA's regulatory scheme to be comprehensive and to apply to federal facilities in the same manner, and to the same extent, as the private sector," the 70 members told Mr. Herrington. DOE's proposed rule "thwarts the intent of RCRA," they say.

Allied-Signal

Continued from Page 9

for the third 1986 quarter were up 49 percent to \$22.9 million from \$15.4 million, notes Edwin E. Tuttle, Pennwalt's chairman and CEO.

Most of the improvement is attributed to the Chemicals & Natural Resources Group, which posted an 80 percent increase in earnings from \$14.7 million to \$26.7 million.

GAF's third-quarter income before extraordinary credits reached \$24.5 million, compared with \$15.6 million a year ago, an increase of 57 percent.

This was the eleventh consecutive quarter of increased earnings, comments Samuel J. Heyman, chairman and CEO. Operating profits increased 26 percent to \$28.3 million from \$31.1 million, Mr. Heyman notes.

Witco reported record net income for the third quarter and for the first nine months. Income in the quarter amounted to \$17,206,000, an increase of 8 percent over \$15,948,000 a year ago.

William Wisniewski, Witco's chairman, said the income growth was mainly attributable to capital improvements which have resulted in more efficient production process. Also cited were lower costs of raw materials.

Superfund Bill Continued from Page 3

tion or failure to clean up toxic wastes," remarked Leslie Dach, a representative of the National Audubon Society.

Chemical Manufacturers Association, which called the bill an "acceptable compromise" that will "strengthen and extend" the national cleanup program, said it was pleased the President decided to approve the measure so EPA can resume full-scale cleanup activities.

Here are the highlights of the new Superfund law signed by President Reagan October 17.

Money — Authorizes spending \$8.5 billion for waste dump cleanup activities over five years. This is up considerably from the \$1.6 billion budgeted for the program's first five years and \$3.2 billion more than sought by the administration.

On top of the \$8.5 billion is \$500 million for a new program to clean up leaking underground storage tanks, a growing environmental concern because of the danger they pose to drinking water sources.

BROADER TAXATION

Who Pays? — During Superfund's first five years, the petrochemical and petroleum industries paid \$1.4 billion in taxes. The new law spreads the burden by creating a broad-based tax on manufacturers with \$2 million or more in annual profits. This provision, strongly opposed by the President, is expected to generate \$2.5 billion over five years.

Under the new tax structure, oil companies will pay \$2.75 billion; petrochemical feedstock producers \$1.4 billion; and the Treasury Department will contribute \$1.25 billion in general revenues.

The remaining \$600 million will come from interest on Superfund monies and cleanup costs assessed against companies responsible for the waste in a particular dump. The leaking underground tank program will be financed by a 13 cent-a-gallon tax on motor fuels.

In addition to the \$1.4 billion feedstock tax,

the chemical industry will pay 20 percent of the petroleum tax, or \$550 million, and \$250 million of the broad-based tax for a total of \$2.2 billion.

To the relief of all Superfund taxpayers who had feared the tax might be imposed retroactively, the bill provides for the tax to become effective January 1, 1987.

Schedules — EPA will be required to begin cleanup work at a minimum of 375 of the nation's worst toxic waste sites in the next five years. The agency must also draft cleanup plans for between 275 and 650 sites during the same period.

The bill gives EPA four years to evaluate the 20,000 or more dumps in the national inventory to determine which ones should be added to the National Priority List, making them eligible for cleanups under Superfund. There are now some 900 sites on the list or proposed for listing.

Cleanup Standards — The bill requires Superfund cleanups to render sites to minimum health standards set by a variety of Federal environmental laws covering the quality of air and water and disposal of toxic substances.

This is a response to criticism that some Superfund cleanups created worse problems and in some cases merely shifted waste from one leaking site to another.

EPA can waive the standards only in instances where following them would be technologically impractical or could cause greater harm to the environment. In states that have tougher standards than those contained in the Federal law, the state standards will apply.

A review of cleaned-up dumps must be conducted every five years to ensure that waste materials are not escaping. The legislation mandates that EPA use permanent treatment techniques when feasible.

Right-To-Know — In a response to the Bhopal, India toxic gas leak tragedy of 1984 and chemical leaks in the US, the bill requires large chemical manufacturers and users to



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HEAVY & AG CHEMICALS

Peroxide Makers

Continued from Page 3

tree regeneration rate much higher than in Canada. Growth estimates for the pulp and paper industry vary, but overall, 1987 growth is estimated to be between 8 and 10 percent, with the Canadian market expanding as much as 15 percent.

One producer notes that 1988 growth may not be quite as spectacular since no new pulp mill construction is expected that year.

Following pulp and paper, environmental applications are looked to next as filling the imminent supply/demand gap. Companies like Degussa and Interco say their experience in Europe gives them a clue to where the US environmental market is going.

Probably the most talked-about application is bioremediation (CMR, 8/4/88, pg. 3). The field is new and fairly broad, but in general refers to the in situ generation of oxygen to enhance normal biological processes. The most promising bioremediation application seems to be in cleaning up underground organic chemical contamination from leaking storage tanks.

Less esoteric environmental applications are also promising. Degussa notes that in Europe peroxide has commercial use in the treatment of waste air such as SO₂ and NO_x. While current EPA emphasis seems to be on waste water treatment, Degussa expects activity in air treatment to pick up in the future.

WASTE STREAM "POLISHING"
A waste water treatment area that produces expected to grow in waste stream "pollishing," where an effluent stream cleaned by traditional methods is given a final treatment with peroxide to bring it up to proper specifications. Overall, stronger environmental legislation on the Federal, state and local levels is expected to create a real need for more complete wastewater treatment.

Peroxide use in uranium mining has been on the wane for many years, victim of nuclear energy's woes. Producers say that gold mining, however, is a prospective new market. Most gold is extracted through a leaching process involving sodium cyanide. In some mining areas, cyanide-contaminated solutions can be collected in ponds and allowed to slowly oxidize. In other areas, though, groundwater contamination is a real problem, and a faster cyanide destruction method, such as oxidation with peroxide, is necessary.

The gold mining business has been spurred lately by rising gold prices. Degussa, which considers itself the leader in this field, expects five million pounds of peroxide to be used in this application next year, up from practically nothing this year.

An area that, according to one producer, could create over 30 million pounds per year of peroxide demand, is in the detergent field. Market sources say that major home laundry detergent makers such as Procter & Gamble and Unilever are test marketing detergent containing peroxide bleaches, the most prominent bleach being sodium perborate monohydrate.

One observer says it takes approximately

25 pounds of hydrogen peroxide to make 100 pounds of sodium perborate. Du Pont is the only US producer of sodium perborate, in a tetrahydrate form. Degussa and Interco both make the monohydrate overseas.

Initial indications are that the detergent test marketing is quite successful, and peroxide producers expect a commercial entry in the not too distant future. Sources say that if the commercial laundry product was successful, most peroxide makers would begin production of sodium perborate or other peroxide.

PRICES TRENDLINES

WEEK ENDING OCT. 24, 1988

CHANGES/UP

None

CHANGES/DOWN

None

HEAVY & AG INDEX

The Heavy & Ag Chemicals Index reflects the prices of 18 representative materials in this sector and the quantity of each produced in 1985.

Oct. 24, 1988	113.88
Oct. 17, 1988	113.88
Sept. 26, 1988	113.88
Oct. 25, 1985	113.88

Chemical Prices Start on Page 40

ides in the US. Du Pont, it is felt, would initially have the upper hand as conversion from the tetrahydrate to the monohydrate perborate is relatively straightforward.

Looking further down the road, peroxide has a potentially vast market in the treatment of waste cellulose. Scientists at the University of Illinois are working with peroxide on ways to convert normally discarded agricultural byproducts such as wheat straw and corn cobs into feed that is digestible by ruminant animals.

US Department of Agriculture estimates that a 1 percent penetration by cellulose waste material into the animal feed market would consume 27 million pounds of peroxide; a 5 percent penetration would consume over 200 million pounds. The technology to make this use commercially viable has not been fully demonstrated, however.

A small but quickly growing market for hydrogen peroxide is in aseptic packaging. One producer puts its current size at two to three million pounds per year and estimates annual growth of over 30 percent.

Milk and juices packaged in foil-lined paper containers are increasing in consumer popularity and peroxide is used to sterilize the package's foil surface. Traditional sterilization methods are out because of the paper's flammability.

BASES & SALTS

SODIUM BISULFATE — Jones-Hamilton Company, of Newark, Calif., notes that it

INORGANIC CHEMICAL OUTPUT: JULY

SELECTED FIGURES IN SHORT TONS FROM THE CENSUS BUREAU.

	JULY '88	JUNE '88	JULY '87
Aluminum sulfate, commercial	112,804	106,483	88,901
Calcium carbide, commercial	17,101	18,113	21,197
Calcium phosphate, dibasic anhyd.	43,871	44,282	86,888
Caustic soda, dry	17,102	15,691	18,363
Caustic soda, liquid	843,081	946,138	843,081
Chlorine, gas	808,824	889,988	828,128
Chlorine, liquid	712,852	708,889	236,841
Hydrochloric acid	279,830	274,882	18,197
Hydrofluoric acid	18,380	15,137	18,197
Hydrogen peroxide	10,703	11,484	88,192
Phosphoric acid, elemental	28,770	27,830	2,390
Phosphoric acid, crystalline	2,371	2,111	7,091
Phosphoric pentoxide	8,438	8,188	8,188
Phosphoric trichloride	7,833	6,128	8,188
Potassium hydroxide, liquid	1,888	1,838	1,888
Potassium pyrophosphate, anhyd.	20,268	21,988	20,268
Sodium aluminates	62,061	65,288	64,411
Sodium metal			
Sodium sulfate, anhyd.			

HEAVY CHEMICALS

has changed its price structure for sodium bisulfate.

The changes were effective October 1. Sodium bisulfate in drums now costs \$15 per hundredweight, up from \$13 per hundredweight. The East Coast price remains \$13 per hundredweight. Additionally, the bulk price is now \$185 per ton in the West, up from \$175 per ton. The East Coast price remains \$175 per ton.

SODIUM CYANIDE — E.I. du Pont de Nemours & Co. changed its price structure for "Cyanogran" and "Cyanobrik" sodium cyanide, effective October 15. The former product is in granular form, while the latter is in briquet form.

The new price for both products is 71¢ per pound, delivered. The price was previously 81¢ per pound, f.o.b. plant.

FERTILIZER MATERIAL

FISH MEAL — Production of fish meal in the leading exporting countries is up by 7 percent in 1988 compared to 1985, according to International Association of Fish Meal Manufacturers (IAFMM), which recently held its annual conference, in Lisbon.

Manufacturers estimate 1988 production at 3.05 million tons, up from last year's 2.85 million tons. This is largely because of increased South American production.

Despite greater production, stocks are estimated to be 280,000 tons, down from 450,000 tons at the beginning of the year. A spokesman for Chile, the world's largest exporter of fish meal, says only 5 to 10 percent of this country's quarterly stocks were unsold, compared to the usual total of 30 to 50 percent. He adds that recent price increases reflect the stock situation. A trade source agrees that the market is firm. Menhaden fish meal costs between \$310 and \$320 per short ton, while Gulf Port fish meal is between \$315 and \$320 per short ton. The Chilean material is \$335 per short ton, f.o.b. plant.

Exports from the main producing countries are up 10 percent, according to Fish Meal Exporters Organization. The organization estimates exports to be 2.85 million tons, up from 1985's 2.8 million tons. Last year's export total, in turn, was 25 percent higher than 1984's total. Exports to the US, though, are about the same as in 1985.

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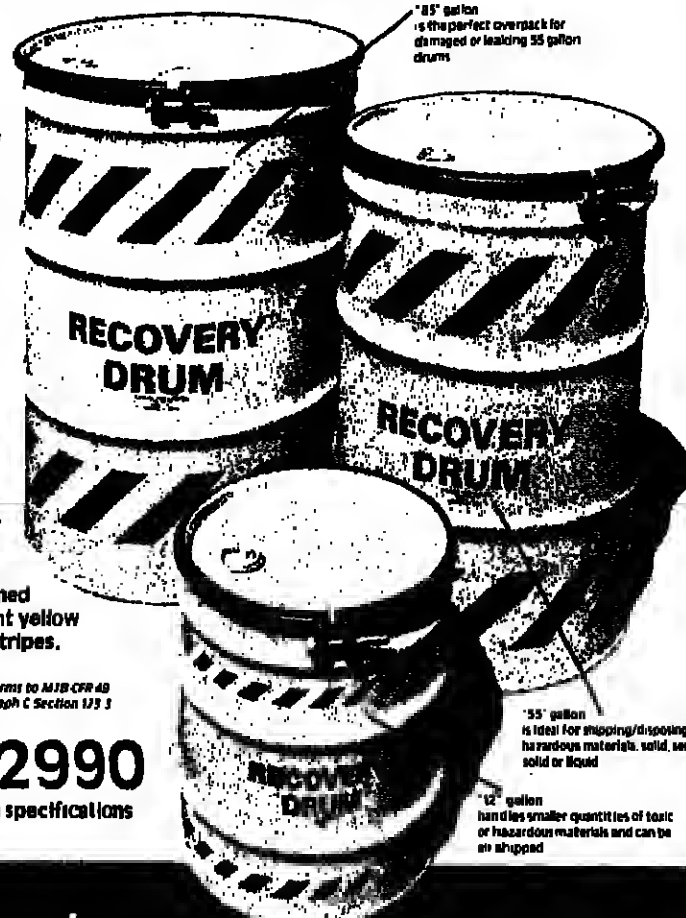
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COATINGS & PLASTICS

Continued from Page 29
million pounds, valued at \$3.6 million dollars, or about 11c. per pound, while list prices for linear and cyclic phthalate plasticizers such as DIDP and DINP are well over 50c. per pound. Shipments of these plasticizers rarely exceed 500 tons per month, and many conclude that some classification error was involved.

One analyst traces the source of this error to a listing of one shipment of 28.9 million pounds to France at a value of \$948,081, or 3c. per pound, clearly an impossibility. He speculates that the figure may have included other esters or related compounds. Without it, a total export volume for August of 5.5 million pounds at \$2.6 million, or around 50c. per pound, seems reasonable.

Producers report that the 2c. per pound October price increase has been holding.

Selling prices, once 20 to 30 percent below list and now approaching list values, producers say. High raw material costs should continue to pressure margins, however. Supplies of 2-ethyl hexanol (2EH) are still extremely tight. So far, Udon Carbide Corporation is the only US producer to have boosted butyraldehyde production, and this primarily for n-butanol, rather than 2EH, production.

Similarly, phthalic anhydride and trimellitic anhydride supplies are expected to remain tight.

PLASTICS MATERIALS

PHENOLIC RESINS — Producers report that phenolic resin price increases set for October 15th and 24th were "rescinded" almost as soon as they were announced, as makers of phenol were unable to realize 2c.-per-pound hikes planned for October 1.

Phenol producers in turn blamed phenolic resin makers, who account for almost half of their total customer volume, for the failure of the raw material price increase. Of the four leading US producers of resin, only Borden Chemical Company and Reichhold Chemical Company raised prices for their phenolic resin product lines when phenol cost increases were announced.

This year, all attempts to raise prices for both phenol and phenolic resins have failed. Prices for the aromatic plunged with crude oil early in the year, and resin prices followed suit. Despite fairly strong demand in construction-related markets, selling prices for the resin slipped by around 10 percent this year.

At least one producer of resin feels that the increase "is still justified" in light of price erosion and strong demand, as well as higher production costs; expenses have risen in excess of raw material savings, he says, and margins have been squeezed this year.

POLYSTYRENE — Other producers of

polystyrene are still deciding whether to follow American Petrofina's lead in raising prices for the polymer.

Makers of the resin are unanimous in a scorching October's increase as a result of light of strong demand and high capacity utilization rates.

Although most feel that the new increase increases will warrant a second increase, a producer questioned whether Petrofina's move was an actual increase or a reflection of October's increase to contract customers.

Petrofina maintains that this is a second increase; the firm claims to have seen very little of the October increase, and will raise higher prices in order to cope with higher nonmerch costs.

Producers report that this is a difficult time to adjust prices; if a second round of polystyrene increases does come about, a quarter will be a more feasible time, they say.

MISCELLANEOUS

METAL DRIERS — Nuodex Inc. will be producing 100,000 lbs. of "dry" synthetic metal driers and 100,000 lbs. of naphthene driers, effective October 1st.

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Polyethylene Unit for Taiwan Will Use the Carbide Process

USI Far East Corporation will build a new polyethylene plant at Keelung, Taiwan, using Union Carbide Corporation's gas-phase "Unipol" process.

According to USI Far East chairman Antonio T. Chong, the planned new 120,000 metric tons-per-year facility will be capable of producing a wide variety of linear low-density polyethylene resins for film and other markets.

Construction is slated to get underway early next year and the plant is scheduled to be completed and in operation by mid-1989. Completion of the new plant, which will be the first Southeast Asian LLDPE plant, will cap a facilities expansion and modernization program begun in 1983 and aimed at bolstering the position as Southeast Asia's leading producer of polyethylene, Mr. Chong pointed out.

According to Mr. Chong, the process advantages include reduced investment and operating costs, compressed construction timetables, and "a unique ability to satisfy the specific product needs of our market."

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Currently, USI Far East is operating three high-pressure low-density polyethylene and two high-density polyethylene lines. Low-density polyethylene annual capacity measures 140,000 metric tons and annual capacity for high-density measures another 80,000 metric tons. Upon completion of the proposed expansion, total annual polyethylene capacity is estimated to reach 340,000 metric tons. Product offering at that time will include low-density polyethylene, high-density polyethylene and linear low-density polyethylene.

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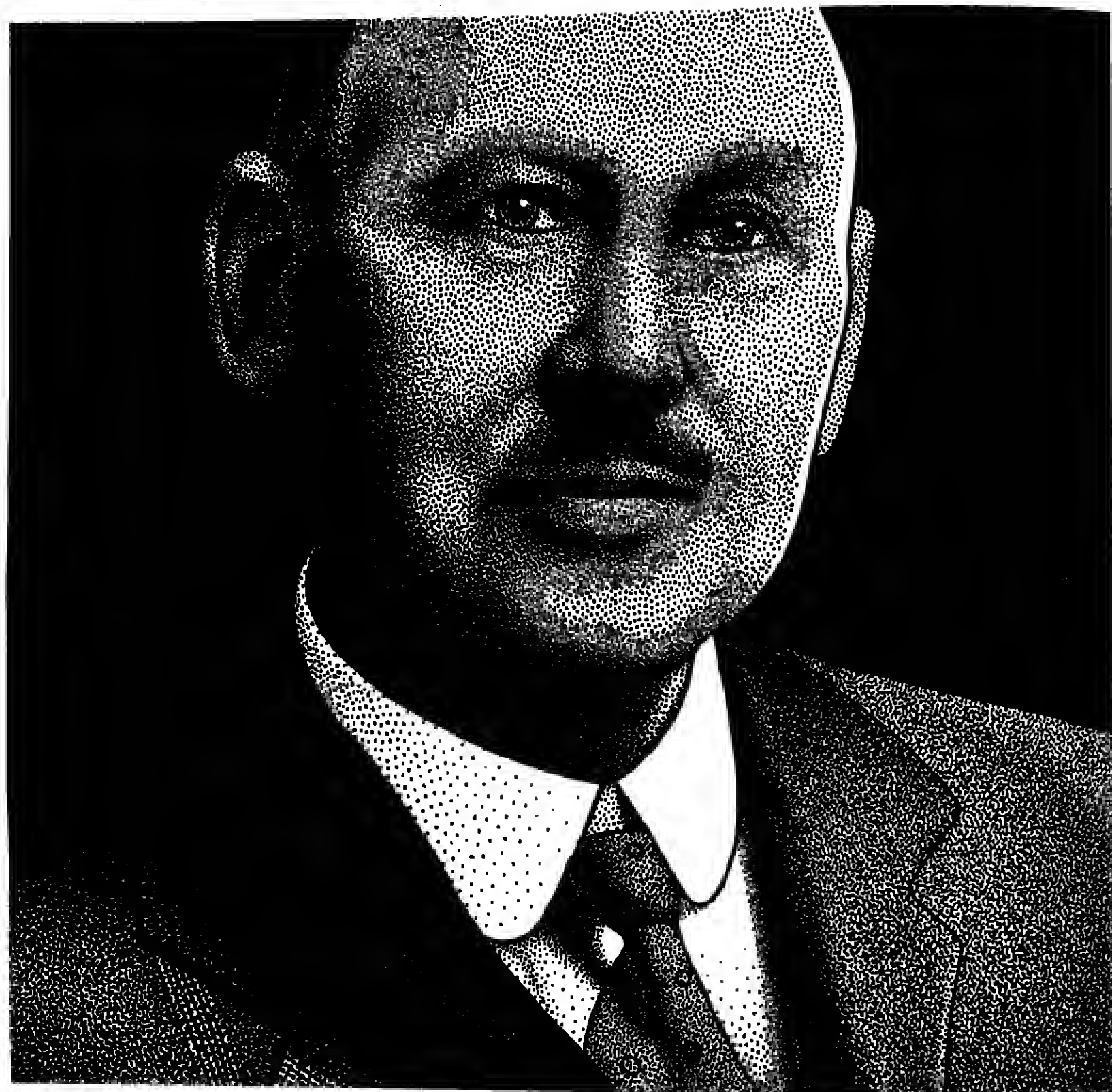
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Senate Shifts

Continued from Page 5

tee would occur at the subcommittee level, where Sen. Howard Metzenbaum (D-Ohio) is the second ranking Democrat behind Sen. Patrick Leahy (D-Vt.) on the patents and trademarks panel. Sen. Metzenbaum, who is a staunch opponent of patent extension, would be in a better position to block attempts by the National Agricultural Chemical Association to move patent term restoration legislation.

Sen. Mathias, the retiring chairman of the patents subcommittee, sponsored patent legislation for NACA in each of the last two Congresses, and helped win Senate approval this year.

At the Agriculture Committee, which has jurisdiction over the Federal Insecticide, Fungicide & Rodenticide Act, it is uncertain whether Sen. Jesse Helms (R-N.C.) would retain the chairmanship or take over the Foreign Relations Committee, where he has seniority over Sen. Richard Lugar (R-Ind.).

Should Sen. Helms move to the Foreign Relations chair, Sen. Lugar would take over at Agriculture — a switch that would cause little consternation among major agricultural companies since both senators sided with the chemical industry on most FIFRA issues during the debate this year.

It's also unclear who would chair the committee if the Democrats win control of the Senate. Sen. Leahy has the most seniority, but he has taken a back seat to Sen. Edward Zorinsky (D-Neb.) to serve as vice-chairman of the Select Intelligence Committee.

LEAHY TO AGRICULTURE?

But with his term on the intelligence committee up, Sen. Leahy could take over at Agriculture — an unwelcome prospect for the chemical industry. While Sen. Zorinsky successfully added patent extension provisions to the committee's FIFRA bill this year, Sen. Leahy fought to toughen groundwater and liability requirements on the industry.

At the Environment & Public Works Committee, a Democratic victory would put Sen. Lloyd Bentsen (D-Tex.) in line for the top spot. But Sen. Bentsen, a strong advocate for the oil and petrochemical industries, would instead choose to chair the powerful Finance Committee.

Sen. Quentin Burdick (D-N.D.), a low-key lawmaker who has shunned committee chairmanships in the past, is next in line. Since he will be up for re-election in 1988, another such move seems unlikely.

After Sen. Burdick and the retiring Sen. Gary Hart (D-Col.) is Sen. Daniel P. Moynihan (D-N.Y.).

Sen. John Danforth (R-Mo.) would retain his chairmanship of the Commerce, Science and Transportation Committee with a Republican victory, but Sen. Ernest Hollings (D-S.C.), a strong foe of product liability reform, would assume command if the Democrats win.

The senior Democrat at the Energy & Natural Resources Committee is Sen. J. Bennett Johnston (La.), a strong supporter of the energy industries.



SUPER CARRIER

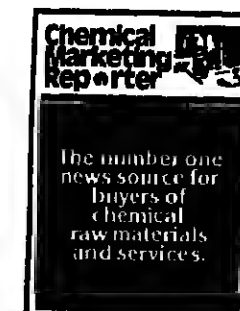
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THE GRADE



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Ozone Shield a Puzzle

Continued from Page 7

thought of," said Ms. Solomon. She said she was "more concerned" than she had been before the expedition began in August, because science has been "unable to come up with an explanation."

But Ms. Solomon said she believes the team's research has eliminated two theories that the ozone depletion is a natural process. One of those theories proposes that the 11-year solar cycle is responsible, by triggering chemical reactions that have a cumulative effect. This would explain why the Antarctic "hole" did not appear before the mid-1970s.

The other postulates that slight changes in wind patterns resulting in an upward movement of air masses could be responsible.

Ms. Solomon said the cause could be a combination of chemical pollution and a variety of natural events, including the seasonal evaporation of stratospheric clouds over the polar region. "It's much more complicated than theories have suggested so far," she said.

The phenomenon is a seasonal event, occurring every Southern Hemisphere Spring, but the depletion has worsened during the past several years.

Scientists are concerned because the thin ozone layer in the stratosphere is the Earth's primary barrier from dangerous amounts of ultra-violet radiation from the sun.

Environmental Protection Agency estimates that each 1 percent decline in ozone at high altitudes may result in 200,000 more

skin cancers around the world every year. Increased ultraviolet sunlight reaching the Earth's surface would also have an adverse impact on plants and marine organisms, ecologists say.

Concern about the ozone layer was first raised in 1974 when two University of California scientists discovered that chlorofluorocarbons released from chlorofluorocarbons can destroy ozone molecules.

The gases have since been banned by EPA as aerosol propellants, but they are still widely used as refrigerants and for industrial purposes.

Although the cause of ozone depletion has not been proven, the major US producer of chlorofluorocarbons recently said they would support, if necessary, a global limit on the future rate of growth of fully halogenated CFC production capacity.

The leading producer, E. I. du Pont de Nemours & Co., said it would be willing to back a cap on current production and suggested that safer substitute could be developed within five years.

USX Stock Correction

The 28 percent of its capital stock being purchased by Aristech Corporation, successor to the Chemicals Division of USX Corporation, will be retired. The speculation in the October 20 CMR story on page 8 that the shares might be made available to management was incorrect.

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PERFUMES & FLAVORINGS

Camphor Oil Market Is Firmer As Production, Usage Decline

Camphor oil prices firmed last week, up 10 cents from \$2.40 to \$2.50 per kilo cost and freight, New York, for Chinese white 35 percent and up 20 cents from \$4.90 to \$5.10 per kilo for camphor oil 1070. Formosan white 88/88 spot prices also firmed recently, up 25 cents to over \$2 per pound. Industry sources attribute the increases to a decrease in production and the stronger influence of synthetic camphor powder.

Imports of all grades of camphor oil are well below the 1985 pace: 22,915 pounds have been imported to the US from January through August, 1988, as versus a 1985 year-end total of 153,214 pounds.

Because all of the natural camphor oils are byproducts of refining camphor powder from crude camphor, the natural oil market is linked to the success of natural camphor powder. "Without demand for (natural) powder," explains a market analyst, "there would be no production of camphor oil."

Synthetic camphor powder production has been stepped up in 1986 to where it has substantially affected both production of and demand for natural camphor powder. Chinese producers have helped to drive the powder prices down by offering two grades of synthetic camphor powder at competitive prices. Chinese technical grade synthetic camphor powder is quoted at \$1.90 per kilo, cost and freight China, and Chinese BP grade at \$2.40 per kilo same basis.

"NATURAL CAMPHOR SCARCER"

"Synthetic powder is very inexpensive so natural camphor powder is becoming scarce," says an industry source. An essential oils broker agrees. "The synthetic camphor powder is steadily undermining the natural powder on the market." With a weakened demand for natural material, production has slowed and the quantities of natural camphor oils yielded as byproducts thereby diminished.

Taiwan, the major source for natural camphor oil with 97 percent of total US imports in 1985 and 86 percent of the imports from January through August, 1988, is reportedly cutting back production. "Taiwan isn't collecting the raw materials to make the powder or its byproducts," says another essential oils broker.

The result of less availability and a projected decline in camphor oil production has been firmer pricing. The various grades of white camphor oil are the most widely used and its prices have been the first to be affected.

Yellow camphor, because it's a comparatively small item of no more than a few tons imported annually, has remained steady, and sources don't expect it to firm. "There is no tendency at this point to raise prices," says an oil dealer.

Camphor 1070 is likely to be further affected by the lessening of natural powder production despite its drawbacks. "Very little 1070 is being imported these days," observes the carcinogenicity of the safrole it contains. Pricing for 1070 is expected to be firmer as usage declines. "Oleoresin camphor is a comparably priced material," says an importer, "without the carcinogenicity."

GERANIUM OIL — Geranium oil prices have weakened in the past week due to a large Egyptian harvest, wide availability of Chinese material, and the scarcity of bourbon geranium oil on the market.

The shipping price of Egyptian oil slipped from \$45.50 per kilo f.o.b. New York to \$44.50 per kilo same basis. The Chinese oil spot prices also fell \$1 from \$23.50 per pound to \$22.50 per pound.

The 1988 Egyptian geranium oil crop was below the 1985 crop, says an essential oils dealer, "causing the prices to soften." An essential oils importer emphasizes the Chi-

nese presence on the market. "The Chinese have been consistently offering their material in large quantities and at prices in line with the Egyptian product."

Bourbon geranium oil from the Reunion islands "has been very difficult to get," according to an oil importer. "They've set up an allocation or quota system for distribution that makes large purchases next to impossible."

The bourbon geranium oil is the most expensive of geranium oils with a spot price of around \$55 per pound. Its higher price is a

PRICES TRENDLINES

WEEK ENDING OCT. 24, 1988

CHANGES/UP

Camphor Oil, 1070, 15c. per kilo
Camphor Oil, Chinese white, 10c. per kilo
Cassia, Indonesian and Chinese, 5-10c. per lb.
Oil seed, Indian reprocessed, 4c. per lb.
Ginger root, Jamaican, 10c. per lb.
Mace, Padang allings, 10c. per lb.
Poppy seed, Dutch, 3c. per lb.
Poppy seed, Australian, 10c. per lb.

CHANGES/DOWN

Caraway seed, Egyptian reprocessed, 2c. per lb.
Cardamom, Indian bleached, 25c. per lb.
Celery seed, Indian, 1c. per lb.
Cloves, Brazilian, 5c. per lb.
Eucalyptus Oil, Chinese 80%, 5c. per lb.
Geranium Oil, Egyptian, \$1 per kilo
Orange Oil, Israeli, 10-14c. per lb.
Sassafras Oil, Neiva fob, \$1 per lb.
Tongkat Ali, Brazilian fob, 55c. per lb.

PERFUMES INDEX

The Perfumes & Flavorings Index reflects the prices of 11 representative materials in this sector and the quantity of each supplied in 1985.

Oct. 24, 1988 71.00
Oct. 17, 1988 71.00
Sept. 19, 1988 71.00
Oct. 25, 1985 71.00

Chemical Prices Start on Page 40

result of higher production costs and limited availability. Another source ascribes the institution of the quota system in Reunion to an effort to avoid the historical practice of adulterating the oil.

CASSIA — Cassia spot prices recorded a 10c. per pound increase across the board last week. Indonesian Korintji "A" through "C" also jumped in the futures market 8c. to 10c. per pound for delivery through January, 1989 and 5c. to 10c. per pound for delivery from February through April, 1989.

Interest in Indonesian cassia was spurred on by the Indonesian government's announcement that cassia will be offered according to the "single selling system," beginning November 1. The arrangement would be similar to the current one in place for the sale of Indonesian nutmeg where a single agency is interposed between producers and foreign buyers, thereby giving the government control of prices.

"The price jumps will continue," says a spice importer, "because the government has gotten involved." US Importers and brokers have fought the institution of such an agency, bringing their arguments to the Indonesian government, to no avail.

"It used to be that supply and demand governed this market, and everyone was getting along well," says a spice broker, "but now prices will become irrelevant to supply and demand."

Chinese material has subsequently been in demand and firmer at 95c. to \$1.03 per pound. "Expect Chinese material to absorb some of the Indonesian market," speculates an importer, "but it will depend on the November 1 price as to how much." Imports from all points of origin have been steady, totaling 16,903,146 pounds through August, 1988, on track to match the 1985 total of 24,092,288 pounds.



FLAVOR AND FRAGRANCE MATERIALS

Benzyl Acetate
Benzyl Alcohol
Cinnamates
Cinnamic Acid
Cinnamic Alcohol
Cinnamic Aldehyde
Nerolin
(2-Ethoxynaphthalene)
Yara-Yara
(2-Methoxynaphthalene)

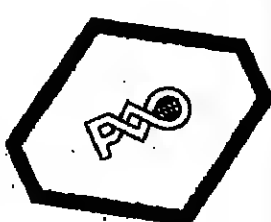
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An index of weekly chemical market reports is on the back cover.

Alumina, activated, grad., 100-lb. bags,	40,000-lb. min. c.i. works	ton	821.00	-
calcined, bulk, same basis	ton	354.00	-	-
100-lb. bags, same basis	ton	390.00	-	-
hydrated, white, bulk, same basis	ton	190.00	-	-
100-lb. bags, same basis	ton	224.00	-	-
Aluminum acetate, basic, dms., 1.0-l. works	lb.	3.25	-	-
Aluminum chloride, anhyd., soln., 5.0-l. tanks, works	c.i., 1-l. works,	lb.	53	-
ret. quad.	lb.	48	-	-
bulk, same basis	lb.	62	-	-
semi-bulk bins, same basis	lb.	16.00	-	-
Aluminum chloride, coml., soln., 32% tanks, works	100 lbs.	12.00	-	-
ret. dms., c.i. works	100 lbs.	20.00	-	-
not ret. dms., same basis	100 lbs.	55	-	-
Aluminum formate, dibasic, liq., 8% Al_2O_3 li. works	lb.	2.75	3.50	-
Aluminum hydrate (see Aluminum, hydrated)				
Aluminum hydroxide, acid, grad. NF, 75-lb. dms., c.i., 1-l. works, liq.	ton	75	-	-
Aluminum metal, 99.94% or more, 50-lb. pigs., 80,000-lb. lots, 1-l. ret.	ton	75	-	-
Aluminum oxide amorphous (see Aluminum, calcined)				
Aluminum paste, feeding grade, std., lining, 2,400 lb. lots, dms.	lb.	1.40	-	-
lining extra fine, same basis	lb.	1.98	2.10	-
Aluminum phenolsulfonate, purif., 100-lb. dms., 1-l.	lb.	9.48	-	-
Aluminum powder, heating grade, std., 2,400 lb. lots, dms.	lb.	3.17	-	-
extra fine, lining, same basis	lb.	4.04	-	-
Aluminum sulfate, bgs., c.i.	lb.	1.25	1.30	-
Aluminum sulfate, bgs., grad., 100 lb. bgs., c.i. works	lb. acid,	ton	205.00	-
Ammonia acid, USP, dms., 20, 40-lb. bags, 17% Ac_2O East and Gulf Coasts	ton	220.80	-	-
West Coast	ton	145.00	-	-
Ammonia, h.e., same basis	ton	300.00	-	-
Iron, extra dry, bgs., 20, 40-lb. bags, same basis	ton	225.00	-	285.00
Aluminum sulfates, USP, grad. dms., 100-lb. bags, 1-l. works	lb.	2.12	-	337
tech., 1-l. same basis	lb.	1.88	-	-
p-Aminobenzoic acid, 1,000 kilos or more, dms., 1-l. works	lb.	9.80	10.10	-
2-Amino-4-chlorophenol dry and 14,000 lbs. or more, 1-l. std.	lb.	5.78	-	-
Aminoethyl ethanediamine, tanks, 1-l. not ret. collect.	lb.	1.33 1/2	-	-
N-Aminoethyl piperazine, tanks, 1-l. not ret. collect.	lb.	1.05	-	-
2-Amino-2-ethyl-1,3-propanediol dms., 1-l., 1-l. b. works	lb.	1.82	-	-

works.lb.	.70	-
Ammonium bromide, dom. NF, gran.,		

works, 100lb.	16.40	53
USP, dms., lb.	1.50	-
Ammonium citrate, dihydrate, 250-lb. dms., l.o.b. works, lb.	2.78	-
Ammonium dimolybdate, ap. proc. 88%, 24,000 lbs. or more, l.o.b. works, lb.	5.48	-
Ammonium fluoride, tech., dms., c.i., l.o.b. works, rt. equiv., lb.	1.78	-
Ammonium heptamolybdate, crystal, dms., 24,000 lbs. l.o.b. works, lb.	5.57	-
Ammonium lauryl sulfate, tanks, l.o.b. works, lb.	.28	.32
Ammonium lignin, sulfonate, bulk, l.o.b. Hockloms, ton	72.00	-
Ammonium nitrate, dms., finer grade, 35.5% N, bulk, B.E. dvd., ton	130.00	135.00
Ammonium oxalate, tech., fine, gran. 300-lb. dms., l.o.b. works, lb.	1.42	1.88
Ammonium pentaborate gran. bgs., c.i. works, lb.	.76	-
Ammonium pentaborate powder 20c. per lb. higher, lb.	-	-
Ammonium persulfate, 225-lb. dms., 24,000 lbs. or more, l.o.b. works, lb.	.58	-
55-lb. bgs., same base (see Di- and monom ammonium phosphates), lb.	.56½	-
Ammonium silicofluoride, dms., c.i., l.o.b. works, lb.	.30%	-
Ammonium sulfate, lg. gran, bulk, c.i. works, lb.	60.00	60.00
std., corr., bulk, l.o.b. works, ton	80.00	70.00
tech. bgs., c.i., l.o.b. works, ton	100.00	120.00
Ammonium sulfate, lg., 40-44% tanks, 100% basic, rt. equiv., ton	45.00	-
Ammonium sulfocyanate, tech., (see Ammonium thiocyanate), lb.	1.02	-
Ammonium thiocyanate, tech., crystal, bgs., c.i., works, lb.	.89	-
tech. std., 50% tanks, rt. equiv., lb.	.13	-
Ammonium thiosulfate, photopigro, 60% tanks, l.o.b. works, lb.	.72	-
Ammonium zirconyl carbonate, soln., bulk, lb.	.57	-
Amly acetate, primary mixed isomers, tanks, dvd., lb.	2.48	2.50
Amly alcohol, primary mixed isomers, tanks, rt. aid, lb.	.81	1.03
Amlydichloride acetylate, dms., lb. p-tert-Amylphenol, bulk, works, lb.	11.00	-
Amlyls of, dms., lb.	10.20	-
Anethole, tech., dms., kds	11.00	-
Anglo-wood oil, bulk, lb.	3.68	4.80
Aniline, tanks, l.o.b. lb.	700.00	-
Aniso. of, dms., lb.	.33	.35½
Aniso. of, dms., Mto	8.80	-

sh, black (see Barium sulfide). 8.00 10.50

[illegible]

Works,.....	lb.	43.50	-	1.44
dehydrate, NF, dms.,.....	lb.	1.25	-	

Calumet, La.	gal.	.85	-	n-Bu
Baytown, Tex.	gal.	-.85	-	sec-
Seamont, Tex.	gal.	.85	-	tert-
St. Albans, Ky.	gal.	.85	-	n-Bu
Chattanooga, Tenn.	gal.	.85	-	Bu
Chapala Bayou, Tex.	gal.	.85	-	Bu
Clinton, Pa.	gal.	.85	-	Bu
Couper Creek, Tex.	gal.	.85	-	Bu
Houston District, Spol.	gal.	.83	.84	Bu
Inds. Ohio	gal.	.85	-	n-Bu
Wood River, Ill.	gal.	.85	-	Bu
Heavyduty, 98% gamma isomer (see Lindene).				
Albany, N.Y.	lb.	1.50	1.50	n-Bu
Albany, N.Y.	lb.	3.38	3.38	Bu
Albany, N.Y.	lb.	5.95	8.05	Bu
Albany, N.Y.	lb.	7.35	7.35	Bu
Albany, N.Y.	lb.	5.95	8.50	Bu
Albany, N.Y.	lb.	10.00	11.20	Bu
Albany, N.Y.	lb.	12.50	-	Bu
Albany, N.Y.	lb.	.55	.58	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.	1.80	-	Bu
Albany, N.Y.	lb.	3.50	3.80	Bu
Albany, N.Y.	lb.	7.45	-	Bu
Albany, N.Y.	lb.	4.35	-	Bu
Albany, N.Y.	lb.	1.73	1.75	Bu
Albany, N.Y.	lb.			

quaid.....lb.	80		80
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[illegible]

a., o.l., same basis. . .	ton	279.00	-	bgs.,
de 80-lb bags	ton	285.00	-	Carbon bl

[illegible]

orks.....lb.	.240	-	.
harmal, medium. box			.

[illegible]

WEEK ENDING OCT. 24, 1986

Polychloroethylene, dry cleaning grade, disc., tanks, dwd.	.lb.		
Indust. dried	.lb.	28%	
dvs., consumer	.lb.	.31	
Perm. acid, dms.	.lb.	2.66	
Perlanoid red 2B, (red 48), calcium salt, dms.	.lb.	5.25	
barkum salts, same basis.	.lb.	6.25	
Peru balsam, l.o.b.	.lb.	3.25	
Petragrain oil, Paraguay	.lb.	8.00	
Petrolatum USP, snow white, dms., c.i., rel'y.	.lb.	.375	
tanks, rel'y.	.lb.	.610	
USP, soft white, dms., c.i., rel'y.	.lb.	.375	
tanks, rel'y.	.lb.	.370	
USP, by wire dms., l.t., rel'y.	.lb.	.370	
Petroleum, USP, Lilly white, tanks, rel'y.	.lb.	.305	
USP, cream, dms., c.i., rel'y.	.lb.	.305	
tanks, rel'y.	.lb.	.30	
USP, light yellow, dms., c.i., rel'y.	.lb.	.350	
tanks, rel'y.	.lb.	.295	
USP, amber, dms., c.i., rel'y.	.lb.	.345	
tanks, rel'y.	.lb.	.290	
Petroleum pitch (see Asphalt; petroleum)			
Petroleum sulfonates, 50-82% sulfonic cont. HNHV, bulk works	.lb.	.484	.48
Milit. same basic	.lb.	.48	
LHW, same basic	.lb.	.48	.48%
Prices for 51% sulfonic content 2c per lb. lower on com- responding molecular wts.			
Phenacetin USP, powder, 300-lb. dms., 1,000-lb. lots, divd.	.lb.	2.20	
100-lb. dms., 1,000-lb. lots, divd.	.lb.	2.22	2.46
p-Phenetidine, dms., c.i., l.o.b.	.lb.	2.00	
Phenobarbital USP, granules, 500-lb. lots, f.o.b. works	.lb.	19.50	
Phenobarbital-sodium, NF, 500-40-lb. lots, l.o.b. works	.lb.	27.00	
Phenol amine, frt. equiv.	.lb.	.25	.28
p-Phthalosulfonic acid, 55% solid, dms., c.i., lot works	.lb.	.94	
tanks, same basis	.lb.	.58	
Phenolphthalein, ind. grade, 50-lb. bags, c.i., f.o.b. works	.lb.	2.53	
puril. grade, same basis	.lb.	2.69	
Phenyl acetate, dms., 100-lb. lots, works	.lb.	1.04	
Phenyloacetic acid, pure, 25-lb. lots, works	.lb.	4.50	
di-Phenylalanine, dms., 25-Kilo lots	.lb.	84.00	
1-Phenyl-3-carbethoxy propylamine, dms., 200-lb. lots, divd. E.	.lb.	3.45	
m-Phenylenediamine, cast, dms., c.i., l.t., l.o.b. works	.lb.	2.07	
p-Phenylenediamine, flaked, dms., f.o.b. works	.lb.	3.25	
o-Phenylenediamine, flaked, dms., f.o.b. works	.lb.	4.00	
Phenylhydrazine hydrochloride, 100- 100-lb. lots or more	.Kilo.	175.00	185.00
Phenylethyl alcohol, dms.	.lb.	3.35	
2-Phenylethyl alcohol, NF, dms.	.lb.	2.10	2.20
2-Phenylethyl alcohol, dms., 30,000 lbs. or more, frt. eqd.	.lb.	1.50	
Phenylmethyl acrylate, 25-lb. cans	.lb.	5.50	6.90
Phenylpropionic acid (Mandelic acid), phenylacetate, 55% m.c. dms.	.lb.	3.50	
1-Phenyl-2-methyl-5-pyrrole zolone, dms., 250-lb. lots divd. E.	.lb.	1.80	
o-Phenylenediamine, U.S. works	.lb.	1.35	2.00
p-Phenylenediamine, U.S. works	.lb.	1.85	
ormore, works	.lb.	1.85	
Phenylpropanolamine hydrochloride, 100-lb. dms.	.lb.	24.00	26.00
Phenylsulfonamide, pur. dms., f.o.b. works	.lb.	2.75	
tech. cryl.	.lb.	2.25	
flake E.	.lb.	2.35	
Prinoxid resin 600, dms., c.i., skd.	.lb.	1.95	2.05
Phosgene, 1-ton ret. cyls., 5 to 9-cyl. quantities, works	.lb.	.55	.67
Phosphoric rock, f.o.b. 40.00 ton of mine washed, 68-68% p.p.i. bulk, c.i. mines	.ton	23.15	
van vessel, tanks, same basis	.ton	26.00	
Phosphoric acid, food grade, 75% in Tampas, 75% in s.k.s., works	.lb.	100 lbs.	29.00
60% tanks, works	.lb.	31.00	
63% E. tanks, l.o.b.	.lb.	31.00	
equival.	.lb.	33.50	
Food grade prices \$2.00 above tech. grade			
Phosphoric acid, agricultural grades, 52-55 % P.S.P., works	.lb.	3.10	
super, min. 70% a.p.a., same basis	.lb.	3.45	
Phosphorus trichloride (yellow) skd dms., c.i., works	.lb.	1.00	
c.i., works, f.o.b. works	.lb.	.31	
Phosphorus oxychloride, tanks, frt. equiv.	.lb.	.40	
Phosphorus pentoxide, dms., c.i., works	.lb.	50.00	
lots bins, sellers	.lb.	45.00	
Phosphorus sesquioxide, dms., l.t., works	.lb.	.82	
Phosphorus pentoxide, dms., c.v., c.i., works	.lb.	.38	
Phosphorus trichloride, dms., c.i., works	.lb.	.38	
tanks, works	.lb.	.38	
Phthalic anhydride, flake, c.i., l.t., dms., frt. equiv.	.lb.	.37	
molten tanks, same basis	.lb.	.30	
Prices 1-1½¢ per lb. higher on West Coast			
Phthalic anhydride, l.o.b. works	.lb.	.35	
Phthaloylsuccinic oxide, lower, red shade, lbs. skd. 40 lbs. boxes	.lb.	8.10	8.50
green shade, same basis	.lb.	8.40	
rosinated, dms., same basis	.lb.	8.20	8.70
sls, l.o.b. Charlotte, N.C.	.lb.	5.00	
Pigment green B, bags	.lb.	2.20	
Pipercaine hydrochloride	.Kilo.	1,500.00	2
Pimento see Aleppo			
Pimento leaf oil, dms.	.lb.	14.50	
Pine oil, 60% methyl alcohol concn, kilo, l.o.b. works	.lb.	47.00	
dms., c.i., t.l., same			
base	.lb.	51.00	
s-Pinene, perfume grade	.Kilo	1.82	
tech. grade	.lb.	2.30	
B-Pinene, perfume grade, tanks, l.o.b. tech. grade, tanks	.lb.	.35	
Piperazine, anhyd., dms., l.t., frt. skd.	.lb.	1.60	
Piperazine, dms.	.lb.	100	
.lb. lots, frt. skd.	.lb.	2.25	
Piperazine dihydrochloride, 53%, dms., l.t., frt. skd.	.lb.	2.00	
Piperazine hexamethylenediamine, dms., 1,100-lb. lots, skd.	.lb.	1.60	
Piperazine phosphate, 42%, dms., l.t., frt. skd.	.lb.	1.60	
Piperidine, 68% min. dms., c.i., l.t., works	.lb.	6.92	
Pipeconyl butoxide dms. divd. E.	.lb.	5.00	
Platinum metal, works	.Troy oz.	568.00	
Polycarbonate resin, pellets, net, l.t.	.lb.	1.84	
Polyester resin, 100% isophthalic, bulk, tankcase, frt. equiv.	.lb.	.51	
isophthalic, same basis	.lb.	.55	
Polyethylene resin, 100% high density, bulk, molding, g.p., hopper cars, frt. skd.	.lb.	.43	
Injection molding, g.p., hopper cars, frt. skd.	.lb.	.43	
extruded, same basis	.lb.	.47	
wire and cable, net, hopper cars, same basis	.lb.	.45	
wire and cable, same basis	.lb.	.55%	
Polyethylene resin, low-density, film extr., hopper cars, frt. skd.	.lb.	.38	
clarity film, hopper cars, frt. skd.	.lb.	.37	
palet shrink film, hopper cars, same basis	.lb.	.36	
extrusion coating, hopper cars, same basis	.lb.	.36	
g.p., hopper cars, same basis	.lb.	.36	
Polyethylene linear low-density g.p. resin	.lb.	.38	
blown film resin	.lb.	.40	
cast film resin	.lb.	.40	
Polyethylene resin, low-density injection molding, g.p., hopper cars, same basis	.lb.	.45	
lineal, CAVT, copper, million wire and cable thermoplastic high-voltage, natural color, same basis	.lb.	.647	
wire and cable, XLPE low voltage, 14% carbon, same basis	.lb.	.70	
wire and cable, XLPE low voltage, 14% carbon, same basis	.lb.	.87%	
wire and cable, black lb.	.lb.	.87%	
Polypropylene sulfate, USP, bulk, 50-lb. units, frt.	.lb.	.52	
Polyoxyethylene in sorbitol monote- arato, dms., 20,000-lb. lots, works	.lb.	.78	
Polyoxyethylene in sorbitol monote- arato, dms., 20,000-lb. lots, works	.lb.	.78	
Polypropylene resin, homopolymer, g.p., net, l.t., frt. skd.	.lb.	.45	
copolymer resin, net, same basis	.lb.	.50	
High Impact, same basis	.lb.	.53	
Colored material skd. per lb. higher for each grade			
Polystyrene resin, cryal., net, hopper cars, frt. skd.	.lb.	.48	
Impact, net, hopper cars, same basis	.lb.	.51	
highest, high impact, net, hopper cars, same basis	.lb.	.52	
expandable beads (EPS), pigging grade, 1,000-lb. lots	.lb.	.89	
modif. same basis	.lb.	.79	
Polyvinyl alcohol, fully hydrolyzed, medium viscosity, bgs., l.t., divd.	.lb.	1.00	
partially hydrolyzed, medium viscosity, bgs., l.t., divd.	.lb.	1.05	
Polyvinyl chloride resin, g.p., homo- polymer dispersion, bgs., l.t., divd.	.lb.	.50	
g.p. suspension, same basis	.lb.	.38	
pipe grade, bulk, same basis	.lb.	.47	
lin grade, bulk, same basis	.lb.	.37	
Polyvinyl chloride, g.p., polymer dispersion, same basis	.lb.	.58	
g.p. copolymer suspension, same basis	.lb.	.45	
Poppone Dutch, bgs.	.lb.	.59	
Turkey, bgs.	.lb.	.53	
Potash agricultural (see Potassium sulfate)			
Potash, caustic, liq. (45% basis), tanks, works	.lb.	13.00	
West Coast, 50% basis, tanks, exterminal	.lb.	18.00	
reg. flake, 58-92%, 400-lb. cans, works	.lb.	100	
Potassium acetate, NF, gran., dms., l.o.b. works	.lb.	42.35	
Potassium chloride, frt., gran., bgs.	.lb.	.80	
Potassium bicarbonate, USP, gran., frt.	.lb.	.81	

Potassium bichromate, gran., 400-lb. dms., c.i., U.I. works.	.46	-	-
Potassium bifluoride, tech. dms., U.I. works, frt. equiv.	.45	.49	-
Potassium bitartrate, NF, gran., powd., bgs., c.i., U.I. works.	.60	1.20	-
Potassium bromide, powd. dms., 100-1,000 lbs. works	18.00	20.00	-
Potassium bromate, gran., powd., 200-lb. dms., c.i., I.o.b. works	1.08	-	-
Potassium chloride, gran., bgs., c.i., I.o.b. works	1.12	-	-
Potassium carbonate, 94.7% K ₂ CO ₃ , tanks, U.I. works.	14.80	-	-
dms., c.i., U.I. works.	20.55	-	-
colored, 98-100% K ₂ CO ₃ , hopper cars, or I. U. works	100 lbs.	-	-
bgs., c.i., U.I. works.	35.20	-	-
100 lbs.	38.40	-	-
Potassium carbonate, 94.7% K ₂ CO ₃ , 400-lb. dms., 5-dm. lots.	.40	.46	-
Potassium chromate, cryst., dms., U.I. works	.14%	-	-
powd., dms., c.i., works.	.30	-	-
purif., gran., 525-lb. dms., I.o.b. works	.40	-	-
Potassium chloride, chemical grade, 99.95% KCl, bulk, c.i., I.o.b. works	105.00	-	-
USP cryst. dms.	1.12	-	-
USP gran., dms.	.87	-	-
USP powd., dms.	.57	-	-
Potassium chloride, agricultural (see Potassium muriate).	-	-	-
Potassium chromate, purif., cryst., dms., works.	.57	-	-
Potassium ferrate, 100-lb. dms., frt. eqd.	.93%	-	-
Potassium cyanide, dms., 20,000-lb. lots or more, I.o.b. works.	1.32	-	-
Potassium difluoride (see Potassium hexafluoride)	-	-	-
Potassium fluoroborate, tech. dms., U.I. works, frt. equiv.	1.40	1.42	-
Potassium fluoride, anhyd., dms., U.I. works	1.68	-	-
Potassium gluconate, dms., U.I. works	1.45	-	-
Price W. of Denver 4c. per lb. higher.	-	-	-
Potassium guano-sulfate, 300-lb. dms., 600 lbs. or more, frt. equiv.	2.10	-	-
Potassium hydroxide, tech. (see Potassium caustic).	-	-	-
Potassium hydroxide, USP, pellets, 100-lb. dms., c.i., U.I. works, frt. equiv.	1.28	1.31	-
Potassium iodide, 1,000-lb. lots dms., U.I. ACG grade truckload	10.72	12.39	-
Potassium-magnesium sulfate, std., bgs., works.	59.00	-	-
basic 40% K ₂ SO ₄ , 100-lb. dms., MgSO ₄ bulk, works	67.00	-	-
Potassium metabisulfate, gran., dms., U.I. works	.44	-	-
Potassium muriate, 50-62.4% min. K ₂ O, 100-lb. bulk, works, frt. equiv.	47.00	-	-
Canada	44.00	46.00	-
solid, fine std., I.o.b.	47.00	-	-
Sask.	49.00	50.00	-
coars., I.o.b. Sask.	50.50	51.50	-
Potassium nitrate, fert. grade, std., 50-ton c.i., divd. SE	297.00	274.00	-
prfcd	277.00	264.00	-
tech., gran., bgs., c.i., min. 90 tons divd.	470.00	-	-
Potassium oxalate, neutral, tech., fine gran., powd., 300-lb. dms., frt. equiv.	2.64	-	-
Potassium persulfate, gran., bgs., c.i., works	1.01	-	-
dms., same basis	1.08	-	-
Potassium persulfate powder 15c. per lb. higher	-	-	-
Potassium perchlorate, dms., c.i., works	.78	-	-
Potassium permanganate, free flow-ing, bulk, hopper trucks, works	1.09	-	-
50-kg. dms., same basis	1.20	-	-
150-kg. dms., same basis	1.17	-	-
Potassium permanganate, USP, 50-lb. pgs., works, c.i., U.I. works	1.36	-	-
Potassium persulfate, 225-lb. dms., 24,000 lbs. or more, I.o.b. plant	73.80	-	-
c/i same basis	72.50	-	-
Potassium pyrophosphate tetrabasic, bgs., c.i., U.I. works, E. frt. equiv.	43.75	47.25	-
bulk, same basis	46.00	46.50	-
Potassium sebacoylate, USP, gran., 200-lb. dms., 2,000 lbs. or more, works	1.62	-	-
USP, powd., 600-lb. lots, 1,000 lbs. or more, same basis	1.42	-	-
Potassium silicate, soln., 25.8-30.2 Ba., 2.5 ratio, c.i., U.I. works	16.90	-	-
dms., c.i., U.I. works	23.00	-	-
40-40.5 Ba., 2.1 ratio, dms., U.I. works	25.65	-	-
40-40.5 Ba., 2.1 ratio, dms., c.i., U.I. works	32.05	-	-
30-30.4 Ba., 2.1-2.2 ratio, U.I. works	26.10	-	-
solid or glass, 2.6 ratio, dms., U.I. works	33.10	-	-
solid or glass, 2.5 ratio, dms., c.i., U.I. works	53.30	-	-
"Ratio" indicates percentage by weight of SiO ₂ divided by percentage by weight of K ₂ O	46.55	-	-
Potassium silicofluoride, bgs., c.i., U.I. frt. equiv.	.11%	.15	-
Potassium sulfonate, NF, gran., or powd., dms.	.90	1.20	-
Potassium tartrate, U.I. works	2.20	3.10	-
Potassium stannate, dms., frt. eqd.	N.A.	-	-
Potassium sulfate, agricultural grade, min. 85% K ₂ SO ₄ std., bulk, c.i., I.o.b. works	150.00	180.00	-
Potassium sulfate, gran., purif., dms., U.I. works	.85	-	-
Potassium tetraborate, gran., bgs., c.i. works.	.130	-	-
dms., same basis	.115	-	-
Potassium tetraborate powder 15c. per lb. higher	-	-	-
Potassium thiocyanate, 100-lb. dms., 225-lb. dms., 5-dm. lots.	4.01	-	-
tech. cryst., dms., U.I. works	.82	-	-
Potassium titanate, cins., c.i., works	.214	-	-
Potassium-titanium fluoride, gran., dms., U.I. works, frt. equiv.	1.24	1.54	-
Potassium-zincum fluoride, tech. dms., U.I. works, frt. equiv.	.78	-	-
Prednisone USP, dms., 5 kilos or more	1.03	-	-
Prednisolone acetate, USP, dms., 6 kilos or more	1.12	-	-
Prednisolone anhyd., USP, dms., 5 kilos or more	1.12	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
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Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-	-	-
Procaine hydrochloride, USP, anhyd	-		

rice bran oil, refined dms. 1.1.....lb.	1.25	-	Sodium bicarbonate, USP, powd., reg. grade, bgs, c.i., works, 100 lbs. equiv.	17.05	0.0
Rochelle salt (see Castor oil acids, appli.)	-	-	coarse, same basis.....	100/lbs.	18.05
Rochelle salt (see Potassium carbonate tartrate)	-	-	fine, same basis.....	100/lbs.	17.20
Roasting pitch (see Coal tar pitch, roasting)	-	-	gran, fine, same basis.....	100/lbs.	17.85
Rose oil, natl., NF, 100% pure, 100 lb. dms.	395.00	990.00	Sodium bicarbonate, gran, bgs, c.i., 100 lbs. equiv.	17.60	0.0
Turkish otto, bold, 100% pure, 100 lb. dms.	2,250.00	3,000.00	Sodium bitartrate, 400-lb. dms., c.i., 100 lbs. equiv.	57	0.0
Passermy oil, NF, Spanish, dms.	8.00	11.00	100-lb. bgs, c.i., same basis.....	78	0.0
Turkish dms.	6.75	15.00	Sodium bitartrate, bulk, c.i., works, 100 lbs. equiv.	17.00	0.0
Perlanene, 30-45%, 100-lb. dms.	21	23	Sodium bitartrate, bulk, c.i., works, 100 lbs. equiv.	13.00	0.0
works.....	-	-	Sodium bitartrate, equiv. bgs, c.i., 100 lbs. equiv.	26.50	0.0
Saccharin NF, gran, soluble, dms.	2.50	2.75	works, East.....	62.00	0.0
1,000-lb. lots, frt. add.	-	-	works, West.....	100/lbs.	62.00
Saccharin NF, powd., soluble, dms.	3.75	-	Sodium bitartrate, sach, 38%, bulk, 100% basic, works, East.....	20.60	0.0
Salt-free oil, non-veg, tank, N.Y., lb.	1.98	53	sach, 100-lb. bgs, 100% basic, works, West.....	20.60	0.0
soluble dms.	1.98	1.02	photo-graphic grade, 43% soln., works, 100% basic, 100 lbs. equiv.	21.90	0.0
Sage leaf, essential oil, 1 bgs, 50 lb. dms.	1.85	-	Sodium borate NF, gran, bgs, c.i., 100 lbs. equiv.	21.90	0.0
Alexand, bgs.....	1.85	-	powd., same basis.....	51	0.0
Sage oil, C.F. French, bold, 100% pure, 100 lb. dms.	1.25	1.30	Sodium borohydride, powd., dms.	52	0.0
Camphor, dms.	9.00	-	100-500 lbs. works.....	19.86	21.9
Sand, 100% pure, 100 lb. dms.	6.80	10.00	Sodium borohydride, distilled water soln, 100% pure, 100 lb. dms.	21.9	0.0
Sodium aldehyde, tank, 100 lb. dms.	3.60	-	3000 gal. tank, gran, 400-lb. dms.	17.45	0.0
Sodium aldehyde NF, gran, powd., dms.	1.07	1.10	Sodium borate, 98% gran, works, 100 lbs. equiv.	1.04	0.0
Sodium aldehyde, 100 lb. dms.	1.23	1.41	Sodium borate, 100% gran, 100 lbs. equiv.	284.00	0.0
USP, cryst. dms., 1,000 lbs. or more.....	1.33	1.83	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
USP, powd., dms., 1,000 lbs. or more.....	1.68	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt (see Phenylsulfate)	-	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, evaporated, common, 80-lb. bgs, c.i., 100 lb. dms.	4.02	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	6.00	81.20	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
chemical grade, same basis.....	4.30	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
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Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
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Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
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lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
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lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
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Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
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Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
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Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
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Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
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Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
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lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
lb., same basis.....	18.00	25.00	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0
Salt, rock, medium, coarse, same basis.....	2.70	-	Sodium borate, 100% gran, 100 lbs. equiv.	382.00	0.0

CHEMICAL PRICES

WEEK ENDING OCT. 24, 1986

Sorbitan monostearate, dms., c.i., t.l.	30, 50.0 lb. min., f.o.b. works, .....	.76	-
Sorbitan trioleate, c.i., t.l., 30,000 lb. min., l.o.b. works, .....		.80	-
Sorbilol, USP, reg. 70% aqueous, dms., c.i., f.o.b. shipping point, .....		.35	-
tenks, f.o.b. shipping point, .....		.30	-
grain, dms., c.i., t.l., works, .....		.70	.74
powd., dms., c.i., t.l., works, .....		.88	
Soybean meal (See Oil, Fat & Wax market report)			
Soybean oil (See Oil, Fat & Wax market report)			
Soybean oil acidulated, soapstock, 95% add, tanks, New York, .....		.14	.16
Soybean oil, acid, dist., dms., .....		.48	.59
tanks, .....		.43	.44
s.d., dms., .....		.47	.58
tanks, .....		.38	.43
Spearmin leaves, imp., bbls.,		2.50	2.70
Spearmin oil, Far West, native,		14.00	15.00
Midwest, native,		10.00	12.00
Far West, Scotch,		15.00	15.00
Midwest, Scotch,		14.50	15.25
Spruce oil, dms.,		6.00	
St. John's bread, edible, bbls., .....		.29	.30
Stearic chloride, anhyd., dms.,		N.A.	-
works,		N.A.	-
Stearic oxide, dms., works,		N.A.	-
Stearous acids, anhyd., dms., wgs,		N.A.	-
Stearous fluoroboric, liq., conc., dms.,			
t.l., works, ltr. equal,		2.50	-
Stearous oxide, dms., works,		N.A.	-
Stearous sulfate, dms., works,		N.A.	-
Stearic acid, double pressed, bulk, .....		.26	.39
single-pressed, bulk, .....		.28	.375
triple-pressed, bulk, .....		.32	.40
Stramonium leaves, bgs.,		18.	.20
Streptomycin sulfate, USP, bulk, kilo,		47.00	-
Strontium carbonate, glass grd., bgs.,			
t.l., works,		37 1/4	-
Strontium nitrate, 50-15 bgs., c.i., works,		61.50	-
Styrene monomer, 66.6% min., t.c.,			
t.l., f.o.b. works, .....		.22	.27
Styrene-acrylonitrile resin, nat., bulk,			
f.o.b. plant, .....		.77	-
cryst., bulk, same basis, .....		.77	.81
clear, same basis, .....		.77	.81
Styrol acetate, dms.,		2.35	-
Succinic acid, purif., cryst., dms., t.l.,			
lir. acid,		2.00	2.10
Succinic anhydride, dms., c.i., t.l., f.o.b. work,		1.71	-
Sucrose, lat., white, bgs., c.i., f.o.b. refy. E.,		33.10	-
Sucrose acetate, lauroylate, 90% dms., t.l., chvd.,		1.18	-
tanks, chvd.,		1.10	-
100%, dms., t.l., chvd.,		1.10	-
Sucrose octa-acetate, denaturing grade, 100-lb. dms., f.o.b. works,		12.80	13.50
Sulfabenzamide, dms., 500 kilos, kilo,		39.50	-
Sulfabenzamide-sodium, dms., 500 kilos, kilo,		25.00	-
Sulfacetamide, UBPP, dms., 500 kilos, kilo,		20.00	23.50
Sulfadiazine, USP, powd., dms., 500 kilos, kilo,		53.00	-
Sulfadiazine-sodium, UBPP, dms., 500 kilos, kilo,		40.70	-
Sulfamerazine, USP, microcrystals, dms., 500 kilos, kilo,		33.50	-
USP, powd., dms., 500 kilos, kilo,		32.00	-
Sulfamethazine-sodium, USP, powd., dms., 50 kilos, kilo,		38.00	-
Sulfamethazine, powder, dms., 500 kilos, kilo,		3.00	10.00
Sulfamic acid, cryst., bgs., c.i., t.l., works,		38.00	41.00
Sulfamic acid, gran., dms., c.i., t.l., works, .....		.38	-
Sulfanilic acid, NF, reg. 1,000-lb. dms., ltr. equal,			
Sulfanilic acid, tech., bgs., t.l., f.o.b. works, .....		.67 1/4	-
Sulfaguanidine, veterinary, grade, dms.,		8.00	-
Sulfur, crude, bright, moist, dom., f.o.b. vesessa, Gulfports,		150.00	-
l.o.b. L.A. refy.,		125.50	-
recovered, dist. Houston,		65.65	-
external, Rotterdam,		135.00	-
l.o.b. tanks, Alberta, Canada, for US delivery,		109.00	-
dark, on-Texas, Pa.,		157.50	-
Sulfur, crude, 99.5% min. purity, cont. flour, 50-lb. bgs., c.i., mines base,		13.60	-
lump, same basis,		13.60	-
Sulfur, refd., 99.5% min. purity, 50-lb. bgs., c.i., mines base,		17.50	-
flour,		20.00	-
Sulfur, refd., sublimed, NF, 99.85% min. purity, 50-lb. bgs., c.i., mines base,		28.00	-
Sulfur, rubbermakers, 99.5% min. purity, cont. reg., 50-lb. bgs., c.i., mines base,		14.00	-
fine, 98% min. passing through 325 mesh, same basis,		15.60	-
Sulfur dichloride, dms., c.i., works, ltr. equal, .....		.24	-
tanks, same basis, .....		.17 1/4	-
Sulfur dioxide, kg., bulk, f.o.b., t.l., f.o.b. works,		230.00	-
Sulfur monochloride, dms., c.i., works, ltr. equal,		22 1/2	-
tanks, same basis,		22 1/2	-

CHEMICAL PRICES

WEEK ENDING OCT. 24, 1986

Sulfuric acid, virgin 100% tanks, works	71.75	85.00
East Coast	75.00	88.40
Gulf Coast	80.25	-
Midwest	88.15	-
Southeast	85.00	-
West Coast	85.00	-
NOTE: For prices on 60 and 68 lbs. multiply by .7767 and .8518, respectively. For prices of 20% turning down, as is, add \$3-\$4 to above prices and multiply by 1.043.		
Sulfuric acid, amelter, 100% tanks, works	48.00	52.00
East Coast	50.00	55.00
Gulf Coast	53.15	-
Midwest	60.00	65.00
Southeast	60.00	-
West Coast	60.00	-
Superphosphate, 46% or more, 100% tanks, works	14.94	16.94
East Coast	15.00	17.00
Gulf Coast	15.00	17.00
Midwest	15.00	17.00
Southeast	15.00	17.00
West Coast	15.00	17.00

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Talc, com, grad, New York bgs, c.i.	84.00	-
East Coast	84.00	90.00
Gulf Coast	84.00	90.00
Midwest	84.00	90.00
Southeast	84.00	90.00
West Coast	84.00	90.00
Talc, com, 80-85, 400 mesh, milled, 100% tanks, works	187.00	238.00
East Coast	187.00	238.00
Gulf Coast	187.00	238.00
Midwest	187.00	238.00
Southeast	187.00	238.00
West Coast	187.00	238.00
Talc, com, 80-85, 400 mesh, milled, 100% tanks, works	187.00	238.00
East Coast	187.00	238.00
Gulf Coast	187.00	238.00
Midwest	187.00	238.00
Southeast	187.00	238.00
West Coast	187.00	238.00

Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-
Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-

Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-
Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-

Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-
Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-

Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-
Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-

Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-
Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-

Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-
Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-

Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-
Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-

Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-
Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-

Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-
Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-

Thiuron, purif, dms, 100-lb. bags	2.75	-
East Coast	2.75	-
Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-
Thiuron, purif, dms, 100-lb. bags	2.75	-
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Gulf Coast	2.75	-
Midwest	2.75	-
Southeast	2.75	-
West Coast	2.75	-

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West Coast	2.75	-
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West Coast	2.75	-

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TX 28-9454 - CABLE AARONE INC.

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CMR MARKETPLACE

CHEMICAL MARKETING REPORTER'S CLASSIFIED ADVERTISING SECTION

COPY DEADLINE: Wednesday Noon preceding date of publication.

RATES/Classified Ads: \$57.75 for 36 words or less; \$9.75 for each additional six words or fraction. No display. First two words printed in bold face type. Non-display advertisements payable in advance, except for contract customers (not subject to agency commission).

REPLIES: Send replies to classified ads with box numbers to CHEMICAL MARKETING REPORTER, 100 Church St., New York, NY 10007-2684.

INFORMATION: For further classified advertising information, call 212/732-9820.

BUSINESS OPPORTUNITIES

Tipon Laboratories, producer of a comprehensive line of antineoplastic chemicals is seeking distributors in the following states: Indiana, Michigan, Ohio, Kentucky and Missouri. Candidates should have call on car dealers, service stations, auto parts stores, etc. Tipon Laboratories, Box 248, Lemoni, IL 60439. Attn: R. Bokun, [312] 257-8130.

CHEMICALS OFFERED

Glycine natural USP 99.5% — new dunes — low low price regular supply — available from New Jersey/Delaware/West Coast warehouses. Inquire now. Wmco M.T. Box No. 729.

CHEMICALS WANTED

Active Buyer of surplus chemicals, pigments, dyes, resins, waxes, plastics etc. Call toll free 1-800-631-3337 or 812-629-6768. Deer Polymer Corp. Chemical Div. 17 Industrial Drive, Holden, MA 01520.

All Surplus — Chemicals — Resins — Oils — Colors — Solvents — Plasticizers — Specialties — Intermediates — bought by: Ramboth Chemical Co., Inc. 52 Vesey Street, P.O. Box 5187, Newark, NJ 07105. Phone: (201) 589-7774.

Coastal Surplus Chemicals, resins, color, pharmaceuticals, dyes, other raw materials, by product, waste, residues and oil-spill materials. Morgan Chemicals, Inc. 5500 Main Street, Williamsport, NY 14221 (716) 632-4000. Telex 919133.

Realize Top Value from the sale of your surplus Chemicals. We buy surplus chemicals, plastics, resins, waxes, etc. Domestic Chemical Co., P.O. Box 494, Fair Lawn, NJ 07410. Phone: (201) 791-2448. Telex: 13-0434.

Resin Corp. will buy your surplus chemicals, resins and other raw materials — pine or oil-soluble, Resin Corp., P.O. Box 53, 1549 W. Blanche St., Linden, NJ 07036. (201) 852-8787.

We Buy Surplus chemicals, colors, resins, solvents, plasticizers by products, etc. Over 30 years of service to industry. Eastern Color & Chemical Co., Inc. 65 Roosevelt Ave., Dept. C.P.O. Box 1029, Valley Stream, N.Y. 11582. (516) 791-4445.

Your Surplus is our inventory. We buy all chemicals, pigments, resins, solvents, plasticizers and pharmaceuticals. Prompt inspection and cash terms on each offering. Pyrene Chemical Sales Co., 1035 Virginia Drive, Fort Washington, PA 19034 (215) 542-9292.

EQUIPMENT OFFERED

Process Equipment for sale: Baker Perkins Tar-Mer process 316SS, 5/8" honed capacity with hydraulic pump for unloading. Automatic fluid bed dryer 316SS, 200 Kgf. capacity. Automatic air cooling tower 125 ton capacity. All equipment is in excellent working condition. Equipment is being sold below used equipment cost. Call 618-767-2038.

POSITIONS OFFERED

Chemist, Manufacturing Chemist or Doctor of Pharmacology. Rapidly growing top quality national vitamin/mineral pharmaceutical manufacturing company is seeking chemist for R&D or new and existing products. Based in the sun belt of beautiful Palm Springs, only 1 hour from Las Vegas airport, no pollution, excellent schools. References required, salary negotiable. Prefer Ph.D. to reply to RMC, P.O. Box 1657, Palm Springs, NV 89401 or call 702-727-4000.

Fast growing import and export line of chemicals seeks experienced individual in product development/marketing/sales to promote custom and line chemical manufacturing capabilities for a major European company in the U.S. Initial training would be aimed at the pharmaceutical industry. Individuals must have minimum B.S. Chemistry or Chemical Engineering-advanced degree preferred. Salary is commensurate with experience. Excellent benefits package. New England location. Reply in confidence to Box 0187-740.

Snios-N.Y. Import/Export/Wholesale seeks individual with 2 years experience, trade or sales, capable of developing regular business in own area. Opportunity for motivated individual to develop business in own area. Compensation commensurate with experience. CMR 744.

Surplus Chemical Trader experienced with by-product stream. Our salary offers \$75,000 a year, plus insurance benefits and incentive program. Write or call Chem Sources, Inc., 11565 Loral Canyon Blvd., Mission Hills, CA 91334. Attn: Ray Rozen 818/365-4534.

SERVICES OFFERED

Custom solids packaging and distribution in the port of Mobile, Multi-wall bags, bulk bags, drums and bulk. Screening, repackaging and warehousing. Rail and truck facilities. Contact: Philip Hahn, SEAPAC, Bldg. 14A, Brookfield Complex, Mobile, AL 36618, 205/433-3541.

SERVICES OFFERED

Reconditioned Drums, cut packaging costs. High grade reconditioned steel drums to meet all DOT specs. 15 gallon-55 gallon. Unlined or specialty. Truck load discounts. Used drums removed. Call Ocean Service N.Y. 718/494-0255, outside N.Y. 1-800-882-8913.

CHEMICAL IMPORTS

Continued from Page 39

ICAN APOLLO Santes, 9/28
American Ship 100 (1,019 lbs) (Sante Caratena) Paraguan, 9/24.
METHOXYCHLORIDE 100 (1,019 lbs) (Sante Caratena) Paraguan, 9/24.
METHYL METHACRYLATE 100 (1,019 lbs) (Sante Caratena) Paraguan, 9/24.
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120 dms (36,048 lbs) (Hanyin Long Beach) Busan, 9/15.
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CHEMICAL PROFILE

HYDROGEN PEROXIDE

OCTOBER 27, 1986

SUPPLY	CAPACITY*
PRODUCER	
Du Pont, Memphis, Tenn.	125
FMC, Bayport, Tex.	95
FMC, South Charleston, W. Va.	85
Interox, Deer Park, Tex.	110
Total	415

*Millions of pounds per year, 100 percent basis. Du Pont Canada is building an 80-million-pound per year plant in Mattland, Ontario, due on stream January 1987. FMC expanded capacity at its Bayport facility by 25 million pounds in the third quarter, 1985, and again by 10 million pounds early this year. FMC has postponed construction of a 22-million-pound-per-year facility in Squemish, B.C. Interox completed a 22-million-pound expansion in July 1985. Degussa Corporation is constructing an 80-million-pound-per-year plant in Mobile, Ala., due on stream in early 1987. Oxychem Canada, a venture involving C-I-L and Atochem and L'Air Liquide of France is building a 44-million-pound-per-year plant in Becancour, Quebec, scheduled for completion in September 1987.

DEMAND
1985: 300 million pounds; 1986: 320 million pounds; 1990: 410 million pounds. (Canada and US)

GROWTH
Historical (1976-1985): 4.4 percent per year; future: 6 to 8 percent per year through 1990.

PRICE
Historical (1952-1986): High, 45c. per pound, 70 percent, tankcars, f.o.b. frt. equal; low, 23c. per pound, same basis. Current: 45c. per pound, same basis.

USES
Chemical synthesis, 24 percent; pulp and paper, 23 percent; environmental uses (includes municipal and industrial water treatment and geothermal steam treatment), 18 percent; textiles, 14 percent; mining, 3 percent; electronics, 3 percent; miscellaneous (including food and cosmetic uses and the distributor market), 15 percent.

STRENGTH
Hydrogen peroxide use is growing rapidly in Canada as new thermomechanical wood pulping mills come on stream. Environmental applications based on peroxide's non-polluting oxidation ability are spreading through new applications and increased EPA pressure on industry. Although small volume-wise, special markets such as aseptic packaging are growing quickly.

WEAKNESS
New peroxide plants in the US and Canada will create significant overcapacity until demand can catch up to supply. The uranium mining market is flat and geothermal use is declining in the face of an alternative technology.

OUTLOOK
Existing markets will keep peroxide growing well, and potential applications could produce growth well above current projections. Most promising is home laundry detergent use of peroxide derivatives as bleaching agents. Products are currently being test marketed by major detergent companies. Also possible are treatment of waste cellulose for animal feed use, an application now in the R&D stage, and bioreclamation of organically contaminated soil.

BOOKSHELF

Chemical Dictionary

The expanded and revised fourth edition of this chemical dictionary* includes approximately 100,000 entries from chemistry, biology, physics, mineralogy and metallurgy as well as descriptions of the most important manufacturing processes and machinery, materials and finished products and terms used in every phase of engineering and technical development.

For chemical compounds, the book provides chemical name, synonyms, structural formula, molecular weight, physical properties, specific gravity, melting boiling points, solubilities and uses.

A special feature is the compilation of trademark or proprietary products in the field of synthetic resins and plastics, foods, drugs, cosmetics, textiles, rubber, paints, varnishes, detergents, petroleum, electronics and radioactivity.

The nomenclature is that generally adopted by the chemist and engineer and references are included and arranged so that desired terms can be located with minimum effort.

*CONCISE CHEMICAL AND TECHNICAL DICTIONARY. Edited by H. Bennett. Cloth, 11 1/2 inches, 1,289 pages. Chemical Publishing Company, 812 Cherry Lane, Vestal, N.Y. 13890, N.Y.

Quality Assurance

Both purchasers and suppliers of manufactured products of all kinds need assurance that products will perform their intended function safely and with an acceptable degree of reliability. Providing this assurance requires certain specific management and the formal discipline of quality assurance provides the framework for these. The formal approach has become increasingly necessary for a number of reasons: contractual requirements, the need to provide evidence of meeting statutory and laboratory requirements and above all, the safety-related and economic consequences of product failure.

Criteria for management actions in respect to quality assurance are defined: number of national standards, but these are very general criteria and need to be interpreted in the context of particular types of manufactured product.

This book* discusses and analyses the unique characteristics of this industry, relate to the quality assurance approach and then makes a critical analysis of the quality assurance criteria and how they should therefore be applied. The aim of the book is to give guidance to engineers/managers associated with the process plant and practices in the context of their industry. The book should be helpful to companies with relevant quality assurance standards and specifications.

*QUALITY ASSURANCE IN PROCESS PLANT MANUFACTURE. By J.I.T. Hogerson. Cloth, 10 1/2 inches, 159 pages. Elsevier Science Publishing Company, 52 Vanderbilt Avenue, New York 10017, \$41.25.

Non-Prescription Drugs

The American Pharmaceutical Association has published this newly revised updated eighth edition of its handbook* on non-prescription drugs. Pharmacists, physicians and other health-care professionals have been using this text for over two decades and it has become the standard classroom text in pharmacy courses dealing with the field. Four years of research, editing and review have been devoted to this new edition. All chapters have been revised and a completely new one (on antipyratics) has been added. New illustrations, anatomical drawings and full-color photographs are included. The handbook contains the latest information on the Food & Drug Administration's review of over-the-counter drugs as well as patient assessment and consultation.

The index has been expanded and all non-proprietary ("generic") and trade names of drugs, in addition to disease states and symptoms, have been cross-referenced. Publications listing non-prescription drugs and their ingredients have been updated.

*HANDBOOK OF NON-PRESCRIPTION DRUGS. Cloth, 8 1/2 x 11 1/2 inches, 741 pages. American Pharmaceutical Association, 2215 Constitution Avenue, N.W., Washington, D.C. 20037, \$10.00.

JOBS & PEOPLE

Scherer Elects Regional Presidents

R.P. Scherer Corporation has elected Kenneth R. Monroe, Jr. president of its major domestic subsidiary, R.P. Scherer North America, and Barrie P. Webb Pacific regional president.

Mr. Monroe joined R.P. Scherer after 20 years of experience in both the domestic and pharmaceutical industries as assistant to the president last June. R.P. Scherer North America is headquartered in Clearwater, Fla.

Mr. Webb, who had been president of R.P. Scherer North America, will be overseeing the company's softgel operations in a geographic area including Australia, Japan and South Korea.



Kenneth R. Monroe, Jr., president of R.P. Scherer North America.



Barrie P. Webb, Pacific regional president of R.P. Scherer North America.

LOUIS L. LOSSBROCK has been named sales manager of the mining and mineral processing group of Nalco Chemical Company. JAMES A. NAWROCKI has been appointed portfolio manager in the corporate portfolio investments department of Dow Chemical Company. JOHN BURROWS has been named manager of FMC Corporation's Marine Colloids Division.

LLOYD A. HUDSON has been appointed product manager of ultra-high molecular weight polymers and polypropylene resins at Himont USA, Inc. JOHN PRIEST has been named national sales manager at the Agricultural Division of Hoechst-Roussel Agri-Vet Company. KENNETH A. KRICK has been elected president and chief executive officer of General American Transportation Corporation, effective 1987.

GARY MERTSCHIN has been appointed di-



Gary Mertschin, appointed director of marketing services at Solitec Polymer Corporation.



Bruce H. Olson, named business manager of emulsions within the chemicals group of Air Products & Chemicals, Inc.

DAVID T. DAVIS has been elected vice-president and treasurer of A.H. Robbins Company. JANET E. MANN has been named general manager of the chelate chemicals management unit in organic chemicals at Akzo Chemie America. GREGORY T. COOPER has been appointed general manager of the distribution group at Chemtech Industries,



Matthew A. Taylor, named president of CYRO Industries. He leaves the Chemical Products Division of Amadon Cyanamid Company where he was president to assume the position with CYRO, a partnership of Cyanamid and Rohm GmbH of West Germany.

Inc. JOHN J. ELLIAG has been named sales representative for the chemical catalysts and processes department in Englehard Corporation's Specialty Chemicals Division. WALTER KOSACHUK has been appointed national sales manager for railroads for E.I. du Pont de Nemours & Co.'s maintenance finishes group. EDWARD A. SCHMITT has been named manufacturing manager for Georgia Gulf Corporation's commodity chemicals. KEVIN M. CURRY has been appointed area manager for Illinois at A.L. Laboratories, Inc.

DAN GILBERT has been named technical director at Surface Protection Industries, Inc. in Los Angeles, Calif. CAREY GLOUSEN has been appointed sales representative for Central and Northern Indiana at A.L. Laboratories, Inc. DONALD E. SAUNDERS has been elected executive



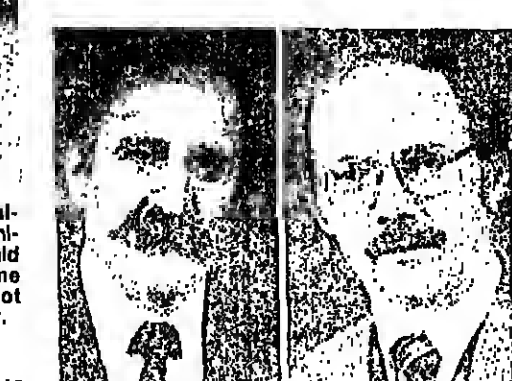
David K. Hanel, named sales representative for the Adhesives Division of National Starch & Chemical Corporation.

Salsbury Chemicals Appoints Managers

Salsbury Chemicals, a unit of Salsbury Laboratories, has appointed Sheldon Gelman Northeast marketing manager and Warren Dunkel Midwest marketing manager.

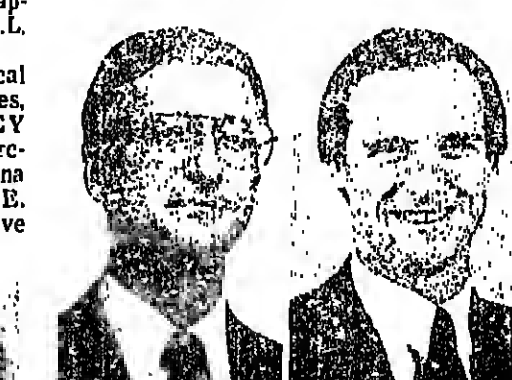
The appointments continue the company's expansion of its chemical manufacturing services. It expects to service the Southeast by year-end when an office in Atlanta is opened.

Mr. Gelman joins Salsbury from Stauffer Chemical where he held various positions for 20 years. Mr. Dunkel joined Salsbury in 1970 in its research and development department.



Sheldon Gelman and Warren Dunkel, newly appointed managers at Salsbury Chemicals.

vice-president and chief financial officer of DuBois Company. KALMAN E. BUCHOVICKY has been appointed market development manager and THOMAS L. FRANCIS technology manager in the Alcon Advanced Ceramics Division at



G. Martechin and B. Olson, appointed managers at Aluminum Company of America.

DAVID K. HANEL has been named sales representative for the Adhesives Division of National Starch & Chemical Corporation. MYRON A. FRANK has joined Stepan Company as director of marketing in industrial chemicals. BURT M. LIKE has joined as product manager, and FREDERICK G. REBEIN has also joined as product manager.

MEETINGS CALENDAR

October 27, 1986

- THIS WEEK**
- AMERICAN ASSOCIATION OF TEXTILE CHEMISTS & COLORISTS, international conference and exposition, Westin Peachtree Plaza Hotel, Atlanta, Ga., October 28-31.
 - NOVEMBER**
 - AMERICAN PETROLEUM INSTITUTE, annual meeting, San Francisco, Calif., November 9-11.
 - AMERICAN SOCIETY FOR TESTING AND MATERIALS, 7th Symposium on Pesticide Formulations and Application Systems, Phoenix Hilton, Phoenix, Ariz., November 5-6.
 - CHEMICAL MANUFACTURERS ASSOCIATION, chemical industry conference, Palmer House Hotel, November 17-18, Chicago, Ill.
 - CHEMICAL MARKETING RESEARCH ASSOCIATION, business school, personal computers in the workplace, Scanicon Executive Conference Center, Princeton, N.J., November 5-7.
 - COSMETIC, TOILETRY & FRAGRANCE ASSOCIATION, scientific conference and exhibit, J.W. Marriott Hotel, Washington, D.C., November 2-5.
 - ORUG, CHEMICAL & ALLIED TRADES ASSOCIATION, Fall luncheon, Waldorf-Astoria Hotel, New York, November 19.
 - DRY COLOR MANUFACTURERS ASSOCIATION, technical seminar, requirements under the Toxic Substances Control Act, Hilton Gateway Hotel, Gateway Center, Newark, N.J., November 12.
 - EUROPEAN PETROCHEMICAL ASSOCIATION, international transport seminar, Frankfurt Sheraton Hotel, Frankfurt, West Germany, November 20-21.
 - FERTILIZER ROUND TABLE, Sheraton Inner Harbor Hotel, Baltimore, Md., November 17-19.
 - FRAGRANCE MATERIALS ASSOCIATION OF THE UNITED STATES, 10th international congress of essential oils, fragrances and flavors, Omni Shoreham Hotel, headquarters hotel, Washington, D.C., November 16-20.
 - K-88, 10th international trade fair for plastics and rubber, Dusseldorf, West Germany, November 8-13.
 - LATIN AMERICAN PETROCHEMICAL ASSOCIATION, sixth annual meeting, Rio Peteca Hotel, Rio de Janeiro, Brazil, November 23-28.
 - NATIONAL PAINT & COATINGS ASSOCIATION, 98th annual meeting, Atlanta Hilton Hotel, Atlanta, Ga., November 3-5.
 - SALES ASSOCIATION OF THE CHEMICAL INDUSTRY, annual luncheon meeting, Bathwood, Towson, N.J., November 6.

- LATER ON**
- AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, center for chemical process safety, international conference on chemical safety issues, Omni Shoreham Hotel, Washington, D.C., February 3-5.
 - CHEMICAL MARKETING RESEARCH ASSOCIATION, Houston Meeting: "The US Chemical Industry Responding to Change," Westin Galleria Hotel, Houston, Tex., February 4-5, 1987.
 - CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION, 73rd annual meeting, Marriott Harbor Beach Resort, Fort Lauderdale, Fla., December 7-11.
 - CHLORINE INSTITUTE, Winter meeting, Mayflower Hotel, Washington, D.C., March 15-18.
 - ORUG, CHEMICAL & ALLIED TRADES ASSOCIATION, 81st annual dinner, Waldorf-Astoria Hotel, New York, March 19.
 - FERTILIZER INSTITUTE, 1987 annual meeting, Orlando World Center, Orlando, Fla., February 11-13.
 - INSTITUTE OF GAS TECHNOLOGY, 11th annual symposium on energy from biomass and waste, Royal Plaza, Walt Disney World Village, Buena Vista, Fla., February 2-4.
 - NATIONAL ASSOCIATION OF CHEMICAL DISTRIBUTORS, 15th annual meeting, Ritz-Carlton Hotel, Naples, Fla., December 2-4.
 - SALES ASSOCIATION OF THE CHEMICAL INDUSTRY, annual Christmas party, New York Hilton Hotel, New York, December 18; education committee, "The Psychology of Selling," Travelers Inn, Brook, N.J., December 18.
 - SOAP AND DETERGENT ASSOCIATION, 200th Meeting and Industry Convention, Boca Raton Club, Boca Raton, Fla., January 20-24, 1987.
 - SOCIETY OF THE PLASTICS INDUSTRY, 4th annual conference of the reinforced plastics and composites, Cincinnati Convention Center, Cincinnati, Ohio, February 2-5.

BUSINESS BRIEFS

AYCO INC., San Fernando, Calif., has appointed Christopher & Laughlin Inc., Pasadena, Wash., as sales representative for the states of Washington and Oregon. Ayco color concentrates, liquid dispersants and blended dry colors to the plastics industry.

BRISTOL-MYERS US Pharmaceutical Company, based in Evansville, Ind., has formed a new division, Bristol-Myers Pharmaceutical Division, to market the company's line of pharmaceutical products. The new division will sell the products under the "Apothecary" label formerly used by Bristol Laboratories to sell generic antibiotics to large drug stores.

COMBUSTION ENGINEERING LTD.'s Simcon UK division has been contracted to supply an operator training simulator for Indian Petrochemicals Corporation Ltd., Baroda, India. The simulator will be used to train plant operators in analog instrumentation and distributed digital control. Indian Petrochemicals has also licensed Simcon's proprietary simulation software.

ENZON INC., South Plainfield, N.J., says it has been awarded a research grant from the National Institutes of Health to develop PEG-uricase for the treatment of hyperuricemia and gout. Clinical studies at Veterans Administration Hospital in East Orange, N.J., indicate that PEG-uricase is

highly effective in breaking down uric acid, according to Enzon.

REICHOLD CHEMICALS Inc.'s Reactive Polymers Division has introduced what the company describes as the first non-bushing, non-staining polyester resin for use in auto body patch compounds. According to Reichhold, the resin has been shown to be unaffected by UV attack with urethanes and most other commonly used top coats. UV attack is the most common cause of body patch blushing.

WITCO CORPORATION's Humko Chemical Division has introduced a fatty bisamide designed as a lubricant for powdered metal compounds. The "Kemamide" product is a micronized synthetic wax which burns clean during processing, leaving no residue, according to Witco. The product is a useful molding aid because it allows dense compaction of the powdered metal, Witco says, and also offers a highly uniform particle size and a high melting point.

ELDIS ENGINEERING & Research Inc., Berkeley Heights, N.J., has published a guide to US injection molders of automobile parts, containing names of injection molders who are potential partners in joint ventures with primary manufacturers and secondary subcontractors seeking to set up plants quickly in the US for domestic and foreign consumption of auto parts.